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THE HISTORY

OF

CIVILISATION IN SCOTLAND.

THE HISTORY

OF

CIVILISATION IN SCOTLAND.

BY

JOHN MACKINTOSH, LL.D.

Author of "The Story of Scotland," "The Revolution of 1688 and Viscount Dundee," "The Highland Land Question Historically Considered," "History of the Valley of the Dee," Etc.

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THE

HISTORY OF CIVILISATION IN SCOTLAND.

CHAPTER XXXV.

History of Scottish Philosophy—Carmichael—Hutcheson.

IN the closing chapter of the third volume an outline of the history of European philosophy in the seventeenth century and the early part of the eighteenth was given, as a preliminary to the history of Scottish philosophy. It was shown that although this speculative movement had arisen and assumed importance in the seventeenth century, it was not felt in Scotland in its philosophical form till during the century following. This movement, with its scrutinising spirit, was partly a result of the great religious revolution of the sixteenth century, with which, in its religious and political consequences, Scotland was deeply affected. On the continent the earlier efforts of the movement were somewhat halting, wavering, and doubtful; but at last the human mind launched into the regions of speculation and scientific investigation with vigour and freedom, and on the scientific side attained a marked degree of success. The sources whence Scottish philosophy drew the materials which were not original to itself, may be indicated thus :—1. The mental philosophy of Greece, especially the ethics and metaphysics of Aristotle, chiefly by Hutcheson, and the later development of Hamilton. 2. The mental philosophy of France, slightly marked in Stewart, to a greater degree in Brown, and also partly in Hamilton. 3. English philosophy, mostly from Locke's *Essay on the Understanding* and Berkeley's writings, notably in Hume, Reid, and Stewart; in a less degree in Brown and Hamilton. 4. German philosophy, almost restricted to Hamilton, at least till quite recent times. Such is a very general indication of the various sources to which Scottish philosophy was partly indebted for its materials; but, except in the cases of Hume and Hamilton, they are not particularly marked.

This history of Scottish philosophy will present a brief account of the origin of the school. The subsequent chapters will treat the views and speculations of Hume, Adam Smith, Reid, Ferguson, Stewart, Brown, Mackintosh, Hamilton, Ferrier, and others. It has not been deemed advisable to discuss the writings of living philosophers. As the main aim is historic exposition in relation to the progress of civilisation, the relative importance of the many subjects which come within the scope of the work, has determined the method and the limits of their treatment.

In the early part of the eighteenth century mental philosophy was at a low ebb in Scotland. As stated in the last volume, the old method of teaching in the Universities was continued in some of them till past the middle of the century; although the College of Edinburgh, in 1708, adopted in the Arts Faculty the specialised method of instruction—a distinct branch of study was assigned to each professor. It appears that before 1741, Stevenson, the professor of logic and metaphysics in the University of Edinburgh, used an abridgment of Locke's *Essay on the Human Understanding* as one of his text-books.

In the University of Glasgow, the regents were restricted to the teaching of special subjects in 1727; and in that year Gershom Carmichael was appointed to the chair of moral philosophy. It is reported that he was a successful teacher; but he died in 1729. He was the author of a short treatise on Logic, which reached a second edition in 1722; and in 1720 published an edition of Puffendorff's treatise, *De Officio Hominis et Civis*, for the use of students, to which he wrote notes and supplements. Hutcheson said that Carmichael's notes were of more value than the text. Carmichael's latest work, *Synopsis Theologiæ Naturalis*, appeared in 1729, shortly before his death. In his effort to prove the existence and perfections of God, he showed considerable discrimination and reasoning power; he considered the arguments of Descartes and Clarke as unsatisfactory, and insisted that the existence of God should be proved on *a posteriori* arguments.[1]

Francis Hutcheson, who has usually been considered the founder of the Scottish School of mental philosophy, was a native of the north

[1] Sir William Hamilton in a note to Reid's *Works*, says—"Carmichael was Hutcheson's immediate predecessor in the chair of moral philosophy, and may be regarded, on good grounds, as the real founder of Scottish philosophy."—Vol. I., p. 30.

of Ireland, but originally of Scotch descent.[2] He was educated at the University of Glasgow, where he studied for six years, and enjoyed the instruction of Carmichael, who was then acting as a regent. On his return to Ireland, he was licenced to preach among a dissenting body. But he soon left this profession, and opened a school in Dublin, where he taught the higher branches of education with much success for about eight years. Having become known by his writings, he was elected professor of moral philosophy in the University of Glasgow in 1729—an office which he held until his death, in the fifty-third year of his age.

As a professor of moral philosophy, he was very successful. He entered on his task with the ardour of a man of keen sensibilities and all the glow of genius, and worked hard. Hence his class soon became large, and he was enabled to exercise a wide influence; in short, he was himself animated with a genuine love of knowledge, of liberty, and of virtue; and thus he contributed much to diffuse a taste for the higher literature in Scotland. He lectured on five days in the week—on natural religion, morals, jurisprudence, and government; and, besides, he lectured other three days of the week on some of the best Greek and Latin writers, explaining their moral views, and also their style. Further, on the Sunday evenings, he delivered a course of lectures on the truth and evidence of Christianity; which is said to have been attended by larger auditories than any of his other courses of lectures; indeed, his Sunday lectures were attended by all the different classes of students.[3]

Hutcheson's writings are these :—1. *An Inquiry into the Origin of our Ideas of Beauty and Virtue*, 1725; 2. *An Essay on the Passions and Affections*, 1728; 3. *Metaphysical Synopsis*, 1742; 4. *Logical Compendium*, a short but useful treatise; 5. his *System of Moral Philosophy*, which was published by his son in 1755, from the original MSS. This last

[2] Born in 1694, died in 1747. He was descended from an Ayrshire family.

[3] Leechman's "Account of Hutcheson's Life and Writings," prefixed to Hutcheson's *Moral Philosophy*, pp. 26-37; see also Rev. Alex. Carlyle's *Autobiography*. Carlyle says—"I attended Hutcheson's class this year (1743) with great satisfaction and improvement. He was a good-looking man, of an engaging countenance. He delivered his lectures without notes, walking backwards and forwards in the area of his room. As his elocution was good and his voice and manner pleasing, he raised the attention of his hearers at all times; and when the subject led him to explain and enforce the moral virtues and duties, he displayed a fervent and persuasive eloquence which was irresistible."—*Autb.*, p. 70.

work presented a complete view of his system, and consists of three Books—the first of which treats on the constitution of human nature; the second presents a deduction of the more special laws and duties of life, previous to civil government; and the third treats on civil polity or government.

Although it is chiefly as a moralist that he attained distinction in the history of philosophy, his psychology was in advance of his time, and on some points it is still worth attention. He distinguished sensation from perception; and stated that the common division of the external senses into five classes is imperfect; he made many ingenious and just remarks on the origin and character of our ideas of beauty; and his view of the formation of acquired desires is natural and reasonable.

As a moralist, Hutcheson insists much on disinterested affections and a distinct moral faculty as essential constituents of human nature. He explains the objects which the moral sense approves, as those having "a tendency to the happiness of others, and the general perfection of the mind possessing them." His definition of the moral sense or faculty itself is to this effect:—It is a power of which anyone by close attention and reflection may convince himself, being "a natural and immediate determination to approve certain affections and actions consequent upon them, not referred to any other quality perceivable by our senses or by reasoning. . . . It may be a constant, settled determination in the soul itself, as much as our power of judging and reasoning." He maintained that reason is only a subordinate factor in our ultimate determination both of will and perception. "The ultimate end is settled by some sense and some determination of will; by some sense we enjoy happiness, and self-love determines to it without reasoning. Reason can only direct to the means, or compare two ends previously constituted by some other immediate powers. . . . This moral sense from its very nature appears to be designed for regulating and controlling all our powers. This dignity and commanding nature we are immediately conscious of, as we are conscious of the power itself. Nor can such matters of immediate feeling be otherwise proved but by appeals to our own hearts. . . . We immediately discern moral good to be superior in kind and dignity to all others which are perceived by the other perceptive powers. . . . By this sense the heart can not only approve itself in sacrificing every other gratification to moral goodness, but have the highest self-enjoyment and approbation of its own

disposition in doing so, which plainly shows this moral sense to be naturally destined to command all the other powers."[4]

Still, he explicitly argues that this moral sense, like all our other faculties, needs to be cultivated and improved, and adduces very obvious illustrations—that special culture improves our taste, as more accurate knowledge and reflection aid us in forming sound judgments.

Hutcheson treated happiness at great length, and with much elegance and fine feeling. He placed our supreme happiness in the exercise of the highest virtue and the gratification of our widest affections. He sums up the subject thus :—"It is plain our supreme and complete happiness, according to the universal doctrine of the wisest men in all ages, must consist in the complete exercise of those nobler virtues, especially that entire resignation to God, and of all the inferior virtues which do not conflict with the superior, and in the enjoyment of such external prosperity as we can, consistently with virtue, obtain.

"A just estimation of the value of life, and of the several sorts of evil we are exposed to, must be equally necessary. If moral evils and some sympathetic sufferings are worse than any external ones, and can make life shameful and miserable amidst all the affluence of other things, as we have shown above ; if at best life is but an uncertain possession we must soon lose, we shall see something that is more to be dreaded than death, and many just reasons why it may on certain occasions be our interest to incur the danger of it. . . . Many are discouraged from a virtuous culture of their minds for the reception of all virtues by a rash prejudice. We are dazzled with the conspicuous glories of some great successful actors in higher stations ; we can allow such virtues to be the noblest enjoyments, but they are placed so high that few have access to them, Nay, persons in the highest positions often despair when their power is not absolute.

"To arm the soul against prejudice, we should remember that the reality and the perfection of virtue, and the inward satisfaction of it too, to a calm mind, depends not on external success, but upon the inward temper of the soul. Persisting under these doubts about the success of glory in the public offices of virtue, or, if we are excluded

[4] *System of Moral Philosophy*, Book I., chap. 1, sects. 1, 5, 6, and chap. 4 throughout.

from them, in all the lower private offices—in a constant sweetness of deportment in obscurity, and a constant resignation to the Supreme Mind—embracing cheerfully the lot appointed for us, repressing every envious notion and every repining thought against providence, resolving to go steadfastly on in the path pointed out to us by God and nature, till our mortal part fall down to that earth whence it sprung—must appear rather more noble and heroic to an All-seeing Eye, and to the judgment of every wise man, than the more glittering virtues of a prosperous fortune.

"When we despair of glory, and even of executing all the good we intend, it is a sublime exercise to the soul to persist in acting the rational and social part as it can; discharging its duty well, and committing the rest to God. Who can tell what greater good might be attainable if all good men exerted their powers even under great uncertainties, and great dangers of misrepresentation and obloquy? Or how much worse should all matters proceed, if all good men desponded and grew remiss under such apprehensions? If virtue appears more glorious by surmounting external dangers and obstacles, is not its glory equally increased by surmounting these inward discouragements, and persisting without the aids of glory or applause, conquering even the ingratitude of those it serves, satisfied with the silent testimony of our hearts and the hope of divine approbation? Thus, the most heroic excellence, and its consequent happiness and enjoyment, may be attained under the worst circumstances of fortune; nor is any station of life excluded from the enjoyment of the supreme."[5]

In the above passages there is evidence, not only of Christian sentiment and resignation to the Supreme Mind, but also of classic culture; the very spirit of the noble and heroic sages of ancient Greece and Rome breathes in them.

Hutcheson placed the object of moral approbation in general benevolence. The calm kind of affections are more approved than the passions; and the calm desire of private good, though not approved as virtue, is far from being condemned as vice; and none of the truly natural appetites and passions when restrained within proper limits are of themselves condemned as evil, although they are not referred by the agent to any public interest. But the disposition which is most excellent, and naturally attains the highest moral

[5] *System of Moral Philosophy*, Book I., chap. 2.

approbation, "is the calm, stable, universal goodwill to all, or the most extensive benevolence. This seems the most distinct notion we can form of the moral excellence of the Deity." The love of moral excellence itself is a very high object of approbation, when by reflection we find it in ourselves or observe it in others.[6]

Although Hutcheson coincided with Shaftesbury touching disinterested affections, he is more distinct than his predecessor ; and his theory of the moral faculty is better developed. In short, his ethical ideas were higher than Shaftesbury's, while his grasp of mind and analytic powers were also much greater.

Touching the relation of morality to religion, he stated that the highest exercise of the moral faculty and the highest happiness are found in the recognition and worship of God.

In the second book of his *System of Moral Philosophy*, Hutcheson treats at length on the subjects of natural rights, society, the foundation of private property, laws, and contracts ; and the third book treats of government, embracing domestic and civil rights. But in these parts of his system, his conclusions are often founded on speculative and imaginary grounds. As an example of his method, his view of the establishment of government may be cited :—Civil power is most naturally founded by these three different acts of the whole people—(1) an agreement or contract of each one with all the rest, that they will unite into one society or body, to be governed in all their common interests by one council ; (2) a decree or designation made by the whole of the people, of the form or plan of power, and of the persons to be entrusted with it ; (3) a mutual agreement or contract between the governors thus constituted and the people, the former obliging themselves to a faithful administration of the powers vested in them for the common interest, and the latter obliging themselves to obedience.[7]

This is merely a statement of the famous *Contract Theory of the Origin of Government*, and substantially the same as enunciated by Hobbes, Locke, and others. Although Hutcheson's general views of government are more sober and liberal than Hobbes', yet both start from the same unhistorical and imaginary basis. He maintained the doctrine that all states have in themselves the causes of dissolution and death.[8]

[6] Book I., chap. 4, sects. 7, 10. [7] Book III., chap. 5, sect. 2.

[8] "States themselves have within them the seeds of death and destruction ; what in the temerity, imprudence, or superstition of the first contrivers ; what

In conclusion, according to Hutcheson, the ethical standard is identical with the moral faculty. His general views obtained in the first instance a pretty wide circulation from his own teaching in the University of Glasgow, and his ethical writings have exercised a considerable influence since his death. His first course of lectures in Glasgow was delivered in 1730, and we shall find that both Hume and Adam Smith were somewhat indebted to Hutcheson. He agreed with his contemporary Butler in holding that the moral faculty is an essential part of human nature.

in the selfish ambition or other meaner passions of the governors and their subjects, jarring with each other and among themselves ; what in the opposition of those seeming interests which such persons pursue ; what in the weakness and inconstancy of human virtue ; and in the proneness of men to luxury and present pleasure, without attention to the consequences. These seeds, along with external force and jarring national interests, have always occasioned the dissolution and death of every political body, and will occasion it as certainly as the internal weakness of the animal body and external causes will at last bring it to its final period. Good men indeed study, by all the art they are masters of, to ward off and delay these catastrophies as long as they can, from their friends or their country ; such kind of offices are the most honourable and delightful employment they can have while they live. But he must little think of the order of nature who sees not that all our efforts will be defeated at last, whether for the preservation of individuals or of the political body."—Book III., chap. 11.

CHAPTER XXXVI.

David Hume and Adam Smith.

SECTION I.

Hume.

THE two names at the head of this chapter have attained high distinction not only in Scottish philosophy, but also in the history of European thought, and especially in the literature of political economy. This is so fully recognised, that it would be superfluous to enlarge on it; but it may be said that Hume, by his bold and sceptical reasoning, aroused philosophers from their slumber, and greatly stimulated thought to further inquiries in various directions; while Smith advanced an attractive moral theory, and founded the science of political economy, which has proved beneficial in suggesting legislative reform and commercial enterprise.

Hume and Smith were mutual friends, and took a keen interest in each other's speculation and researches. In several branches their inquiries were identical, but in others they were as wide as the poles asunder.

Hume[1] published in 1739 two volumes of a work entitled *A Treatise of Human Nature:* "Being an Attempt to introduce the Experimental Method of Reasoning into Moral Subjects." In explaining his system, it is requisite to direct special attention to this work, as it is the most systematic, elaborate, and complete of all his productions.

It consists of three books, which treat consecutively "Of the Understanding; Of the Passions; and Of Morals." The first book is divided into four parts. The first part of it, which consists of seven sections, treats of ideas and impressions—their origin, composition,

[1] Born in 1711, and died in Edinburgh in 1776. Shortly before his death he wrote a short but characteristic account of himself, entitled *My Own Life.* Besides this there are various biographical accounts of Hume, but I need only mention that the late Dr. H. Burton produced one, entitled *The Life and Correspondence of David Hume,* published in 1848; and more recently Professor Huxley published an account of Hume and his philosophy.

connection, abstraction, and other relations. The second part, extending to six sections, discusses at length the ideas of space and time. The third, contains sixteen sections, which deal with the subjects of knowledge and probability. The fourth, extending to seven sections, discusses the sceptical and other systems of philosophy, and completes his exposition of the Understanding. The second book is divided into three parts:—The first part consists of twelve sections, and under the general heading "Of pride and humility," a pretty large division of the passions is treated; the second part, also consisting of twelve sections, treats of love and hatred; and the third part, containing ten sections, discusses the problem of the will, and the direct passions. The third book is, in like manner, divided into three parts:—The first part contains two sections, which treat of virtue and vice in general; the second part, extending to twelve sections, treats of justice and injustice, and various points connected with society and government; and the third part contains six sections, which treat of various virtues and vices.

Such is the plan of Hume's great philosophical work. Although it is characterised by a marked simplicity of arrangement, it presents some of the most subtle thought and searching reasoning to be found in any literature. Still it did not at once produce a great impression; for, in his own words, "never literary attempt was more unfortunate than my *Treatise of Human Nature*. It fell dead-born from the press without reaching such distinction, as even to excite a murmur among the Zealots." This caused him to recast portions of it in a more popular form, under the titles of "Essays: Moral and Political;" "Essays: Moral, Political, and Literary;" "An Inquiry concerning Human Understanding;" "An Inquiry concerning the Principles of Morals;" and "Political Discourses."[2] But the

[2] Hume's numerous short essays treat on a variety of subjects. Some of the more notable are those on eloquence, the standard of taste, and the highly polished ones on the Epicurean, the Stoic, the Platonist, and the Sceptic. In these and in others of his essays, he shows a fine critical faculty.

Regarding some of his other writings, it may be mentioned here that his *Natural History of Religion* was first published in 1757; his two essays, the one on *Suicide*, and the other *Of the Immortality of the Soul*; his *Dialogues concerning Natural Religion*, and some other short pieces, were published after his death.

Several editions of his essays were published in his lifetime; and new ones were frequently added, as well as many alterations and corrections made on them. Since his death various editions of his works have appeared. An edition of his philosophical works, edited by Mr. T. H. Green and Mr. T. H. Grose, with valuable introductions and notes, was published in 1874-5, in four large volumes.

principles which he enunciated in the *Treatise of Human Nature* were not essentially changed in any of his subsequent writings. In an advertisement to the authoritative edition of his *Essays and Treatises*, published in 1777, the year after his death, he says that henceforth he desired that his later writings alone should be regarded as containing his philosophical sentiments and principles; and it is only fair to concede that the original *Treatise of Human Nature*, which he composed at an early period of his life, did not in all points truly represent his later sentiments; yet it is mainly in the improvement, the ease and polish of his style, and in the omission of two parts of the original treatise, containing some of his most acute speculations, that his later writings differ from his earliest—a difference of form and finish rather than of thought and matter. Moreover, it is in the original treatise that Hume can be historically studied to the best advantage.

Although Hume's mind was original and vigorous, and his thinking and critical powers unusually great, yet he found the principles upon which he most effectively operated mainly in Locke and in Berkeley. There is little trace of the influence of Descartes in the *Treatise of Human Nature;* but his style bears internal evidence of the influence of French literature. No English philosophical writer of a prior date approached Hume in the qualities and the grace of his style.

On various points treated in the moral part of the treatise, the influence of Hobbes and of Hutcheson are easily traced; and Hume held the latter philosopher in very great esteem. Let us proceed to the exposition of his system, beginning with his own account of the state of his mind when he approached the subject:—

"At the time therefore that I am tired with amusement and company, and have indulged a reverie in my chamber, or in a solitary walk by a river side, I feel my mind all collected within itself, and am naturally inclined to carry my view into all those subjects, about which I have met with so many disputes in the course of my reading and conversation. I cannot forbear having a curiosity to be acquainted with the principles of moral good and evil, the nature and foundation of government, and the cause of those several passions and inclinations which actuate and govern me. I am uneasy to think I approve of one object and disapprove of another; call one thing beautiful and another deformed; decide concerning truth and falsehood, reason and folly, without knowing upon what principles I proceed. I am concerned for the condition of the learned world,

which lies under such a deplorable ignorance in all these particulars. I feel an ambition to arise in me of contributing to the instruction of mankind, and of acquiring a name by my inventions and discoveries. These sentiments spring up naturally in my present disposition, and should I endeavour to banish them, by attaching myself to any other business or diversion, I feel I should be a loser in point of pleasure; and this is the origin of my philosophy."[3]

He begins his exposition of the Understanding with a description of impressions and ideas, and resolves the perceptions of the mind into these two terms. The perceptions which enter the mind with most force he calls impressions, and this term includes all our sensations, passions, and emotions; by ideas he means the faint images of impressions excited in thinking and in reasoning. Having distinguished impressions and ideas into simple and complex classes, he then proceeds to discuss their qualities and relations. Impressions and ideas differ from each other only in the degrees of their vivacity —the one seems to be the reflection of the others; in the case, however, of complex ideas, he notices some exceptions to this doctrine; but seeing that all simple perceptions and ideas are copies of impressions, and that the complex ones are formed from them, therefore these two kinds of perceptions exactly correspond. He next starts the main subject—the existence of impressions and ideas—and proposes to inquire which of them are causes and which effects.

He concludes that simple impressions are prior to their corresponding ideas, and that impressions are of two kinds—those of sensation and those of reflection. The first kind arise originally in the mind from unknown causes; the second are derived mostly from our ideas. Thus:—"An impression first strikes upon the senses, and makes us perceive heat or cold, thirst or hunger, pleasure or pain, of some kind or other. Of this impression there is a copy taken by the mind, which remains after the impression ceases, and this we call an idea.[4] This idea of pleasure or pain, when it returns upon the soul, produces the new impressions of desire and aversion, hope and fear, which may properly be called impressions of reflection, because derived from it. These are again copied by the memory and imagination, and become ideas, which, perhaps, in their turn give rise to other impressions and ideas." At this stage he expresses his opinion

[3] Book I., Part IV., sect. 7.

[4] This is nearly the same as Hobbes' doctrine.

that the examination of the sensations belongs more to the anatomists and natural philosophers than to mental science, and therefore he does not enter upon them.[5]

Memory and imagination he treats together, but neither of them at much length. The first, he says, retains a strong and vivid impression, the second only a much fainter one. The chief distinction between memory and imagination consists in the fact that the memory retains the impressions in the order and form in which it receives them, while the imagination is not at all restricted in this way, as its function is to transpose and change its ideas.[6] This power of the imagination he connects with his exposition of the association of ideas.

Ideas are associated in three ways—namely, by semblance, contiguity, and cause and effect. These relations are briefly explained as principles of association, with the remark that, of the three, the associative relations of causation are the most widely ramified. Among the effects of the association of ideas, the most remarkable are those complex ideas which are the common subjects of our thoughts and reasonings, and generally arise from some principle of union among our simple ideas. These complex ideas he divides into relations, modes, and substances; and proceeds to examine these.[7]

He classifies relations under seven general heads—(1) resemblance, the most essential requisite of philosophical relation; (2) identity; (3) space and time; (4) quantity or number; (5) objects having the same quantity, but in different degrees; (6) contrariety; and (7) cause and effect. He affirms that we have no idea of substance, except as a mere collection of particular qualities, and closes the first part of his treatise with a discussion of abstract ideas. He alludes

[5] Book I., sects. 1, 2.

[6] Further on he says—"Nothing is more dangerous to reason than the flights of imagination. . . . Men of bright fancies may in this respect be compared to those angels whom the Scriptures represent as covering their eyes with their wings."—Book IV., sect. 7. Again, in his later work, *An Inquiry concerning Human Understanding*, he remarks—"Nothing is more free than the imagination of man; and though it cannot exceed the original stock of ideas furnished by the external and internal senses, it has unlimited power of mixing, compounding, separating, and dividing these ideas, in all the varieties of fiction and vision."—Sect. 5, Part II.

[7] Book I., Part I., sects. 3, 4. What he states above, however, should be compared with his treatment of the principles of association in his later work, *An Inquiry concerning Human Understanding*, sect. 3.

to Berkeley's view, and argues that abstract or general ideas are formed from individual and particular ones, and brings in the convenient term Custom, of which he makes so much use in his speculations—"If ideas be particular in their nature, and at the same time finite in their number, it is only by custom they can become general in their representation, and contain an infinite number of other ideas under them."[8]

The second part of the Understanding contains a long and exceedingly penetrating discussion of the ideas of space and time. He opens with a few sentences of polished banter about the dispositions of philosophers and their disciples. The first serious point taken up is the doctrine of infinite divisibility, which is handled with consummate skill. Founding upon the limited power of the human mind, he proceeds vigorously to demolish it; and in the fourth section he puts it in this form :—"Our system concerning space and time consists of two parts, which are intimately connected together. The capacity of the mind is not infinite, consequently no idea of extension or duration consists of an infinite number of parts or inferior ideas, but of a finite number, and these simple and indivisible : it is, therefore, possible for space and time to exist conformable to this idea; and if it be possible, it is certain they actually do exist conformable to it, since their infinite divisibility is utterly impossible and contradictory.

"The other part of our system is a consequence of this. The parts, into which the ideas of space and time resolve themselves, become at last indivisible; and these indivisible parts, being nothing in themselves, are inconceivable when not filled with something real and existent. The ideas of space and time are, therefore, no separate or distinct ideas, but merely those of the manner or order in which objects exist; or, in other words, it is impossible to conceive a vacuum and extension without matter, or a time when there was no succession or change in any real existence."[9]

The discussion is carried on through other three sections with great animation and ingenuity, and culminates in the annunciation of absolute Idealism, thus :—"Now since nothing is ever present to the mind but perceptions, and since all ideas are derived from something antecedently present to the mind, it follows that it is impossible for us so much as to conceive or form an idea of anything speci-

[8] Book I., Part I., sects. 5, 6, 7.

fically different from ideas and impressions. Let us fix our attention out of ourselves as much as possible; let us chase our imagination to the heavens, or to the utmost limits of the universe—we never really advance a step beyond ourselves, nor can we conceive any kind of existence, but those perceptions which have appeared in that narrow compass. This is the universe of the imagination, nor have we any idea but what is there produced." [10]

The third part of the Understanding, which treats of knowledge and probability, is the longest in the book; many topics of great interest are handled in it; but I shall chiefly direct attention to his views on causation.

Knowledge and science mainly turn and rest on the various kinds of philosophical relation. He re-states the relations which have been already noticed in a preceding page, and expiscates them at length in his own manner. In treating causation, he begins by proposing to search for the origin of the idea; and finds it to be some relation among objects. He then seeks to discover what the relation itself is; but all that he discovers is that the two relations of contiguity and priority in time are essential to causation. But seeing that any object may be contiguous and prior to another without being considered as its cause, there is a necessary connection to be taken into account, and it is upon this, the most essential relation of causation, that he made his grand attack. It would be tedious to follow him through his long discussion, and in fact it is unnecessary; therefore, I will only indicate the lines of his method of investigating the subject, and its results.

He inquires why a cause is always necessary, and affirms that the real state of the question is "whether every object which begins to exist, must owe its existence to a cause; and this he continues, I assert neither to be intuitively nor demonstratively certain." After a very long exposition of the manner in which we reason beyond our immediate impressions, and conclude that particular causes must have particular effects, he takes up the discussion of the idea of necessary connection, and asks—"What is our idea of necessity, when we say that two objects are necessarily connected together? Upon this head I repeat what I have often had occasion to observe, that as we have no idea that is not derived from an impression, we must find some impression that gives rise to this idea of necessity, if

[9] Book I., Part II., sects. 1, 2, 3, 4. [10] Book I., Part II., sects. 4, 5, 6.

we assert we have really such an idea. . . . Finding that it is always ascribed to causes and effects, I turn my eye to two objects supposed to be placed in that relation, and examine them in all the situations of which they are susceptible. I immediately perceive that they are contiguous in time and place, and that the object we call cause precedes the other we call effect. In no one instance can I go any further, nor is it possible for me to discover any third relation between these objects. I therefore enlarge my view to comprehend several instances. . . . Upon further inquiry I find that the repetition is not in every particular the same, but produces a new impression, and by that means the idea, which I at present examine. For, after a frequent repetition, I find that upon the appearance of one of the objects, the mind is determined by custom to consider its usual attendant, and to consider it in a stronger light upon its relation to the first object. It is this impression, then, or determination which affords me the idea of necessity."

After more discussion of a negative cast, he reaches the following result :—" The necessary connection between causes and effects is the foundation of our inference from one to the other. The foundation of our inference is the transition arising from the accustomed union. These are therefore the same.

" The idea of necessity arises from some impression. There is no impression conveyed by our senses which can give rise to that idea. It must, therefore, be derived from some internal impression or impression of reflection. There is no internal impression, which has any relation to the present business, but that propensity which custom produces, to pass from an object to its usual attendant. This, therefore, is the essence of necessity. Upon the whole, necessity is something that exists in the mind, not in objects ; nor is it possible for us ever to form the most distant idea of it, considered as a quality of bodies. Either we have no idea of necessity, or necessity is nothing but that determination of the thought to pass from causes to effects, and from effects to causes, according to their experienced union."

He further draws the following conclusions :—1. All causes are of the same kind, and there is no ground for the distinction, sometimes made, between efficient, formal, material, and final causes ; for every cause is efficient, or, if it is not, there is no cause at all. 2. There is but one kind of necessity, as there is but one kind of cause ; and the distinction between moral and physical necessity has no foundation

in nature. 3. The necessity of a cause to every beginning of existence is not founded on intuitive or demonstrative evidence. 4. We can never have reason to believe that any object exists, if we cannot form an idea of it.[11]

[11] Book I., Part III., sects. 1-6, *et seq.* On this subject of Causation, Hume never changed his views, for in his later work, the *Inquiry concerning Human Understanding*, we find the following :—"When it is asked what is the nature of all our reasonings concerning matter of fact, the proper answer seems to be that they are founded on the relation of cause and effect. When again it is asked what is the foundation of all our reasonings and conclusions concerning that relation, it may be replied in one word—Experience. But if we still carry on our sifting humour, and ask what is the foundation of all conclusions from experience, this implies a new question, which may be of more difficult solution and explication. . . . I shall content myself in this section with an easy task, and shall pretend only to give a negative answer to the question here proposed. I say then that, even after we have experience of the operations of cause and effect, our conclusions from that experience are not founded on reasoning, or any process of the Understanding."—Sect. 4.

He repeats the statement that there is no connecting principle between cause and effect, which we can discover, and argues the point thus :—"These two propositions are far from being the same. I have found that such an object has always been attended with such an effect, and I foresee, that other objects, which are, in appearance, similar, will be attended with similar effects. I shall allow, if you please, that the one proposition may be justly inferred from the other : I know, in fact, that it always is inferred. But if you insist that the inference is made by a chain of reasoning, I desire you to produce that reasoning. The connection between these propositions is not intuitive. There is required a medium, which may enable the mind to draw such an inference, if indeed it be drawn by reasoning and argument. What that medium is, I must confess, passes my comprehension ; and it is incumbent on those to produce it, who assert, that it really exists, and is the origin of all our conclusions concerning matter of fact."—Sect. 4.

Again, "it appears, then, that this idea of a necessary connection among events arises from a number of similar instances, which occur, of the constant conjunction of these events ; nor can that idea ever be suggested by any one of these instances, surveyed in all possible lights and positions. But there is nothing in a number of instances, different from every single instance, which is supposed to be exactly similar ; except only that after a repetition of similar instances, the mind is carried by habit, upon the appearance of one event, to expect its usual attendant, and to believe, that it will exist. This connection, therefore, which we feel in the mind—this customary transition of the imagination from one object to its usual attendant—is the sentiment or impression, from which we form the idea of power or necessary connection. Nothing further is in the case. Contemplate the subject on all sides ; you will never find any other origin of that idea. . . . And what stronger instance can be produced of the surprising ignorance and weakness of the Understanding, than the

In the fourth part of the book on the Understanding, Hume discusses Scepticism with regard to reason and the senses, touches briefly on ancient and modern philosophy, and treats at length of the immateriality of the soul and of personal identity. His treatment of the first of these subjects is of little real value, but his discussion on the senses is of more importance; while his handling of the immateriality of the soul and personal identity chiefly consists of a repetition and application of the negative principles, which he had before reached in the earlier parts of the book, and are therefore of less consequence. From the way in which he refers to the views of Spinoza, it is evident that he had never thoroughly studied the works of that great thinker. In the history of thought, indeed, Hume was not strong.

Touching reason, he says:—"When I reflect on the natural fallibility of my judgment, I have less confidence in my opinions than when I only consider the objects concerning which I reason; and when I proceed still further, to turn the scrutiny against every successive estimation I make of my faculties, all the rules of logic require a continual diminution, and at last a total extinction of belief and evidence.

"Should it here be asked me, whether I sincerely assent to this argument, which I seem to take such pains to inculcate, and whether I be really one of those sceptics who hold that all is uncertain, and that our judgment is not in anything possessed of any measure of truth and falsehood; I should reply, that this question is entirely superfluous, and that neither I, nor any other person was ever

present? For surely, if there be any relation among objects, which it imports us to know perfectly, it is that of cause and effect."—Sect. 7. Hume's doctrine of causation, it will thus be seen, is the same in his latest works as in his earliest. I shall only adduce one other example of its application:—

"We are ignorant, it is true, of the manner in which bodies operate on each other: their force or energy is entirely incomprehensible; but are we not equally ignorant of the manner or force by which a Mind, even the Supreme Mind, operates either on itself or on body? Whence, I beseech you, do we acquire any idea of it? We have no sentiment or consciousness of this power in ourselves. We have no idea of the Supreme Being but what we learn from reflection or our own faculties. Were our ignorance, therefore, a good reason for rejecting anything, we should be led into that principle of denying all energy in the Supreme Being as much as the grossest matter. We surely comprehend as little the operations of one as of the other. It is more difficult to conceive, that motion may arise from impulse, than that it may arise from volition? All we know is our profound ignorance in both cases."—Sect. 7.

sincerely or constantly of that opinion. Nature, by an absolute and uncontrollable necessity, has determined us to judge as well as to breathe and feel; nor can we any more forbear viewing certain objects in a stronger and fuller light, upon account of their customary connection with a present impression, than we can hinder ourselves from thinking as long as we are awake, of seeing the surrounding bodies when we turn our eyes towards them in broad sunshine."[12]

Now, touching the senses from a sceptical standpoint, Hume had already said, "that belief is nothing but a lively idea related to a present impression;" and, taking it for granted that body exists, he proposes to inquire into the causes which induce us to believe in its existence. He argues at length that by the senses we cannot know anything of continued or distinct existence. He then inquires how we attain the belief in the continued existence of the objects of the senses, and attributes it to the constancy and coherence of our impressions of them. He points out that when the mind starts in a particular train, it has a tendency to continue, even when objects fail it; and through this tendency we transform interrupted existence into continued existence. And, on his own theory of the mind, he accounts for our believing in this imagined continuity.

In the section on personal identity, he denies in the abstract the existence of self, and could find nothing to give us the impression of an unchangeable self. He observes "that the true idea of the human mind is, to consider it as a system of different perceptions or different existences, which are linked together by the relation of cause and effect, and mutually produce, destroy, influence, and modify each other. Our impressions give rise to their correspondent ideas, and these in their turn produce other impressions. One thought chases another and draws after it a third, by which it is expelled in its turn. . . . As memory alone acquaints us with the continuance and extent of this succession of perceptions, it is to be considered, upon that account chiefly, as the source of personal identity. Had we no memory, we should never have any notion of causation, nor consequently of that chain of causes and effects which constitutes our self or person."[13]

Before passing from Hume's exposition of the Understanding, which is the most important part of his philosophy, let us recapitulate the leading points. It has to be observed that he develops a system of

[12] Book I., Part IV., sect. 1.

[13] Book I., Part IV., sects. 2, 6.

the human mind. 1. There are impressions, perceptions, and ideas, of which we are conscious; and, although we may imagine that we know external things as objects of perception, still, in reality we know nothing but our own impressions and perceptions. 2. Therefore, we know nothing of an actual external world save as a phenomenon, which may be, for ought we can ever know, a creation of our own minds—the world of imagination. 3. Since our notion of Causation is nothing but a generated habit of looking at our impressions, perceptions, and ideas as constantly conjoined in the relations of contiguity and succession—a mere result which custom has engrafted on human belief—beyond this we can have no idea of any power, force, energy, or necessary connection in causation. 4. Thus, as already indicated, Hume's system of the mind is a form of absolute Idealism; in short, he embraced the idealistic principles of Berkeley, excepting that portion of them relating to a separate soul or spirit, which in the bishop's own system played so important a part. Even granting the truth of Hume's starting-point, and his fundamental principles, still a large part of his treatment of the Understanding may be fairly described as reasoning in a circle; for he proposes to examine, to clear up, and to solve difficulties, but he often returns to his original point of departure without disclosing anything at all, save the inevitable impressions and ideas in the universe of the imagination.

Passing to the Second Book of the Treatise, which is devoted to the treatment of the passions, under this general term he includes impressions of reflection, emotions, desires, and appetites; and divides them into two main classes,—the direct and indirect passions, which are all founded on pleasure and pain. He enumerates the direct as desire, aversion, grief, joy, hope, fear, despair, and security, together with the will; the indirect class embraces pride, humility, ambition, vanity, love, hatred, envy, pity, malice, generosity, and others associated with these. He also distinguishes the reflective emotions, as the calm and the violent:—"Of the first kind is the sense of beauty and deformity in action, composition, and external objects. Of the second are the passions of love and hatred, etc. This division is far from exact. The raptures of poetry and music frequently rise to the greatest height; while those other impressions, properly called passions, may decay into so soft an emotion as to become, in a manner, imperceptible."[14] He gives a description and a kind of

[14] Book II., Part I., sect. 1.

natural history of the several groups of passions, in which much insight and acute thinking are displayed.

His usual method of explanation is to fix upon one or two generic passions, and then, by a vigorous process of argument and reasoning, mainly of a deductive form, to show their nature, their relation to other passions, and their modes of manifestation and influence. I can only afford space for a short specimen of his manner of exposition in this department, taken from the section on property and riches:—"For the same reason that riches cause pleasure and pride, and poverty excites uneasiness and humility, power must produce the former emotions, and slavery the latter. Power, or an authority over others, makes us capable of satisfying all our desires; as slavery, by subjecting us to the will of others, exposes us to a thousand wants and mortifications.

"It is here worth observing that the vanity of power, or shame of slavery, are much augmented by the consideration of the persons over whom we exercise our authority, or who exercise it over us. For supposing it possible to frame statutes of such an admirable mechanism that they could move and act in obedience to the will, it is evident the possession of them would give pleasure and pride, but not to such a degree as the same authority, when exercised over sensible and rational creatures, whose condition, being compared to our own, makes it seem more agreeable and honourable. Comparison is in every case a sure method of augmenting our esteem of anything. A rich man feels the felicity of his condition better by opposing it to that of the beggar. But there is a peculiar advantage in power, by the contrast which is, in a manner, presented to us between ourselves and the person we command. The comparison is obvious and natural. The imagination finds in it the very subject. The passage of the thought to its conception is smooth and easy. And that this circumstance has a considerable effect in augmenting its influence, will appear afterwards in examining the nature of malice and envy." [15]

He treats on the will at length, and maintains that it is controlled by the strongest motive; and he emphatically asserts that reason alone can never afford a motive to any action of the will, nor oppose passion in the direction of the will. "Reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them." Reason operates without

[15] Book II., Part I., sect. 10.

producing any sensible emotion, and, except in the more sublime disquisitions of philosophy, scarcely ever gives any pleasure or uneasiness.

But it is evident that there are certain calm desires and tendencies, which, though they are real passions, produce little emotion in the mind, and are more known by their effects than by the immediate feeling. These desires are either (1) certain instincts originally implanted in our nature, such as benevolence and resentment, the love of life, and kindness to children ; or (2) the general appetite to good and aversion to evil.[16] Besides these calm passions there are other violent emotions which have a great influence on the will, such as impending evils which raise our fears and aversions, and produce a sensible emotion. The common error of philosophers has been to ascribe the direction of the will to one of these principles, and in supposing the other to have no influence. Men often act knowingly contrary to their interest ; for this reason the view of the greatest possible good does not always influence them. Men often counteract a strong passion in the pursuit of their interests and designs. "It is not therefore the present uneasiness alone which determines them. In general we may observe, that both these principles operate on the will ; and, where they are contrary, that either of them prevails, according to the general character or present disposition of the person. What we call strength of mind, implies the prevalence of the calm passions above the violent ; though we may easily observe there is no man so constantly possessed of this virtue as never on any occasion to yield to the solicitations of passion and desire." [17]

In the Third Book, Hume explains his moral views as originally advanced in the *Treatise of Human Nature ;* and in an advertisement

[16] Touching this distinction of the calm passions and desires, and the function assigned to them, Hume so far seems to follow Hutcheson.

[17] Book II., Part III., sect. 3. Locke had stated that the strongest immediate desire, or, as he sometimes phrased it, "the present uneasiness," determines the will to action ; in effect his theory was that the will is always determined by the strongest motive, but the theory is better stated by Hume.

Hume, however, did not thoroughly develop the relation between belief and will. He merely says, what I have already indicated in a preceding page, "that belief is nothing but a lively idea related to a present impression. This vivacity is a requisite circumstance to the exciting of all our passions, the calm as well as the violent." But he gives no satisfactory exposition of belief in its relation to the will, although he touches on it in his later work—*An Inquiry concerning Human Understanding*, sect. 5.

to it he expresses a hope that it may be understood by ordinary readers, with as little attention as is usually accorded to books of reasoning. As we have already seen, he maintains that reason alone can never be a motive of action, or impulse of the will; accordingly, he insists that moral distinctions are not derived from reason, but from a moral sense. What constitutes this moral sense, however, he failed to render explicit: and there is a lack of precision on the moral faculty, in the original development of his system. He recognises sympathy as the chief source of moral distinctions, which, along with utility, seems to form the foundation of his ethical views. The following is the clearest expression of his moral doctrines which I have found in the *Treatise of Human Nature*:—

"Most people will readily allow that the useful qualities of the mind are virtuous, because of their utility. This way of thinking is so natural, and occurs on so many occasions, that few will make any scruple of admitting it. Now, this being once admitted, the force of sympathy must necessarily be acknowledged. Virtue is considered as means to an end. Means to an end are only valued so far as the end is valued. But the happiness of strangers affects us by sympathy alone. To that principle, therefore, we must ascribe the sentiment of approbation, which arises from the survey of all those virtues that are useful to society or to the person possessed of them. These form the most considerable part of morality." [18]

In his attempts to account for the origin of society, and of property, he adopts the deductive method. He usually states certain propositions, and then proceeds to adduce arguments in support of the conclusions which he intends to establish; still his treatment of these subjects is always interesting and often ingenious, although quite unhistorical and imaginary. His conception of the problem of the origin of government resembles that advanced by Hobbes, only it is not so violent; as Hume had more polish than the sage of Malmesbury.

Having now completed my account of Hume's system as it was originally conceived and advanced; but seeing that he himself averred that his matured ethical views were embodied in his later work, *An Inquiry concerning the Principles of Morals*, I shall briefly summarise his moral principles from this famed production.

[18] Book III., Part III., sect. 6. It may be observed that the influence of the current moral theories are visible in the views of Hume.

It consists of nine sections, which treat the following topics :— "The general principles of Morals ; Benevolence ; Justice ; Political Society ; Why Utility pleases ; Qualities useful to ourselves ; Qualities immediately agreeable to ourselves ; Qualities immediately agreeable to others ; Conclusion." In an appendix, the points of "moral sentiment, self-love, justice, and verbal disputes" are treated. If we were only to look at the conception, the execution, and the limits of this treatise, it might be pronounced an admirable production. The main difference between it and the corresponding part in the *Treatise of Human Nature*, lies in the greater importance ascribed to utility in the later work.

1. As in it utility or a reference to the happiness of mankind is the standard of right and wrong, and also the ground and motive of moral approbation. 2. While the moral faculty itself assumes the form of a compound of reason and generous sentiment. 3. He insists warmly on the existence and importance of the sentiment of benevolence, but hardly recognises it as leading to any uncompensated self-sacrifice. 4. Touching the varied and great constituents of human happiness, he is meagre and defective. 5. He accepts the prevailing moral code of the society of his day. 6. According to his view, the inducements to virtue are, on the one side, our humane sentiments, and on the other, our self-love ; the two classes of motives concurring to promote both our own good and the good of mankind. 7. The connection of ethics with politics is not developed ; he does not distinguish the legal sanction of morality from the popular sanction ; he draws no line between duty and merit. 8. He recognises no connection between ethics and religion. Such then are the leading principles of this remarkable treatise, which for long served as a text-book to utilitarian moralists.

Touching Hume's other writings, I must be brief. His essay on *Miracles* is exceedingly well worked out. His argumentation is entirely founded on the principle that experience is our only guide in estimating and appreciating the force and the value of evidence ; but he also strengthens this position by a free use of every available weapon, that is, every passion, sentiment, feeling, and weakness of the human mind, were called into requisition as elements of the problem, and all employed with great sagacity and ingenuity. A short quotation will confirm this, and indicate his method.

"With what greediness are the miraculous accounts of travellers received—their descriptions of sea and land monsters, their relations

of wonderful adventures, strange men, and uncouth manners? But if the spirit of religion join itself to the love of wonder, there is an end of common sense, and human testimony, in these circumstances, loses all pretension to authority. A religionist may be an enthusiast, and imagine he sees what has no reality. He may know his narrative to be false, and yet persevere in it, with the best intentions in the world, for the sake of promoting so holy a cause. Or even where this delusion has not place, vanity, excited by so strong a temptation, operates on him more powerfully than on the rest of mankind in any circumstances, and self-interest with equal force. His auditors may not have, and commonly have not, sufficient judgment to canvass his evidence. What judgment they have, they renounce by principle, in these sublime and mysterious subjects. Or if they were ever so willing to employ it, passion and a heated imagination disturb the regularity of its operations. Their credulity increases his impudence, and his impudence overpowers their credulity."

He observes that records of miracles are found to abound most among ignorant and barbarous communities, and that when they are found among civilised nations, they are merely transmitted from the former. He also notices that the earliest annals of all nations are full of prodigies, omens, oracles, and judgments, which almost hide the few natural facts that are mixed with them; but, as we advance nearer to the enlightened ages, these mysterious and irregular phenomena become less and less prominent, though never entirely extirpated from human nature.

His ultimate conclusion was this:—"That no human testimony can have such force as to prove a miracle and make it a just foundation for any system of religion. I beg the limitations here made may be remarked, when I say, that a miracle can never be proved, so as to be the foundation of a system of religion. For I own that otherwise there may possibly be miracles, or violations of the ordinary course of nature, of such a kind as to admit of proof from human testimony; though, perhaps, it will be impossible to find any such in all the records of history." [19]

[19] *Inquiry concerning Human Understanding*, sect. 10. Hume's own opinion of his main argument was this:—"I flatter myself, that I have discovered an argument which, if just, will, with the wise and learned, be an everlasting check to all kinds of superstitious delusion, and consequently will be useful as long as the world endures. For so long, I suppose, will the accounts of miracles and prodigies be found in all history, sacred and profane."

The chief value of this essay was that it presented a very able examination of the various circumstances, influences, and conditions which are apt to colour, exaggerate, and otherwise affect the evidence of certain classes of facts and events. It is a kind of inquiry for which Hume possessed unmatched qualifications.

As already mentioned, his *Natural History of Religion* appeared in 1757: it consists of a short introduction, and fifteen sections. Following his usual method, he began with a general statement to the effect that polytheism was the primary religion of mankind, and then proceeds by arguments and reasoning to prove this general proposition. Thus the work is argumentative rather than historical, although he uses historical examples to confirm his propositions and arguments. It may be observed that the origins and the causes of early religions have now been far more satisfactorily explained than was possible in Hume's day.

His *Dialogues concerning Natural Religion*, published after his death, are highly polished in style, and handle in a speculative form various interesting topics. But they are somewhat monotonous, and in fact contain little which had not before appeared in his other publications.

Concerning the value of Hume's philosophy as a whole, it must be characterised as incomplete, which is partly a consequence of its sceptical foundation. He raises many questions and difficulties which he does not solve; while he often comes to unsatisfactory conclusions, by taking up the principles of Locke and Berkeley, and driving them to their logical issues.[20]

[20] Hamilton's *Reid*, Vol. I., footnotes, pp. 129, 444, 457, 489; *Discussions*, p. 85, *et seq.*; *Lectures*, Vol. I., pp. 294, 373. Hamilton says:—"The sceptic . . . cannot himself lay down his premises, he can only accept them from the dogmatist; if false the sooner they are exposed in their real character the better. Accepting his principles from the dominant philosophies of Locke and Leibnitz, and deducing with irresistible evidence these principles to their legitimate results, Hume showed by the extreme absurdity of these results themselves, either that philosophy was a delusion, or that the individual systems which afforded the premises were erroneous or incomplete. He thus constrained philosophers to the alternative, either of surrendering philosophy as null, or of ascending to higher principles, in order to re-establish it against the sceptical reduction. The dilemma of Hume constitutes perhaps the most wonderful crisis in the history of philosophy; for out of it the whole subsequent philosophy of Europe has taken its rise."—*Lectures*, Vol. I., pp. 394-395.

Mr. J. S. Mill thought that Hamilton was wrong in his opinion of the scope and end of Hume's philosophy, and expresses his own conviction "that Hume sincerely accepted both the premises and the conclusions of his own system."—Mill's *Examination of Hamilton*, p. 554.

Owing to a concurrence of various circumstances, Hume's speculations have had a direct and wide influence on subsequent philosophy, psychology, ethics, theology, and criticism. In psychology he has had eminent followers in Britain and in other countries; while the sceptical side of his system has had much influence in many directions. But his doctrine of causation appeared to some thinkers as the most pressing problem which he had raised; and it was chiefly this doctrine which suggested to Kant the necessity of a new and thorough examination and criticism of the faculties of the human mind. While Kant's own chief works, thus suggested, have in turn been the main source whence modern speculation has since radiated. Under varied modifications, Hume's influence on Scottish philosophy was direct and important in its results.

Another notable consequence of the critically sceptical side of Hume's writings, sprang from his suggestions concerning the methods of testing evidence, which touched both scientific and historical researches. He showed that the current modes of estimating historical evidence were extremely defective, and also boldly exposed the weakness of some of the grounds of belief. To this we owe Campbell's *Essay on Miracles*, not to mention, at the same time other works of less note. In short, Hume's influence was widely felt in culture, science, and historic criticism.

According to the best contemporary testimony, personally, Hume was a most exemplary man. Adam Smith's character of him is well known; but I will quote the verdict of another of his contemporaries, a man who was a good judge of character, and knew Hume well. "At this time (1753), David Hume was living in Edinburgh and composing his *History of Great Britain*. He was a man of great knowledge, and of a social and benevolent temper, and truly the best-natured man in the world. He was branded with the title of Atheist, on account of the many attacks on revealed religion that are to be found in his philosophical works, and in many places of his history —the last which are still more objectionable than the first, which a friendly critic might call only sceptical. *Apropos* of this, when Mr. Robert Adam, the celebrated architect, and his brother lived in Edinburgh with their mother, an aunt of Dr. Robertson's, and a very respectable woman, she said to her son, 'I shall be glad to see any of your companions to dinner, but I hope you will never bring the Atheist here to disturb my peace.' But Robert soon fell on a method to reconcile her to him, for he introduced him under another name,

or concealed it carefully from her. When the company parted she said to her son, 'I must confess that you bring very agreeable companions about you, but the large jolly man who sat next me is the most agreeable of them all.' 'This was the very Atheist,' said he, 'mother, that you were so much afraid of.' 'Well,' says she, 'you may bring him here as much as you please, for he's the most innocent, agreeable, facetious man I ever met with.' This was truly the case with him; for though he had much learning and a fine taste, and was professedly a sceptic, though by no means an Atheist, he had the greatest simplicity of mind and manners, with the utmost facility and benevolence of temper, of any man I ever knew. His conversation was truly irresistible, for while it was enlightened it was very naïve." [21]

Section II.

Adam Smith.

Adam Smith was one of Hume's most beloved and intimate friends. Smith ultimately limited his researches to special departments of moral and economical science. In these he was the more exhaustive thinker of the two, even if his efforts were less striking than those of his illustrious contemporary.

He was born at Kirkcaldy in 1723, and he lived till 1790. He was educated at the University of Glasgow, and attended the lectures of Hutcheson, then professor of moral philosophy. From Glasgow he went to Oxford, where he seems to have greatly widened the range of his culture, and thus laid the foundation of the vast stores of information, which he ultimately turned to so good account. He returned to Scotland in 1746, with the hope of obtaining a professorship in one of the Universities. In 1748, under the patronage of Lord Kames, Smith delivered a course of lectures on rhetoric in Edinburgh. He was appointed professor of logic in the University of Glasgow, in 1751; but in the following year he was transferred to the chair of moral philosophy, a position more in accord with his taste and aspiration.

[21] *Autobiography of the Rev. Dr. Alex. Carlyle*, pp. 272-273, 1860. This production contains a good deal of small gossiping, and some important and useful information.

In this chair his teaching covered a wide field. He divided his course of lectures into four parts :—(1) natural theology ; (2) ethics ; (3) justice, or that part of morality which can be stated under precise rules ; (4) political science, in which he delivered some of the thoughts, afterwards embodied in his *Wealth of Nations*. In 1763, he was persuaded to resign his chair, and undertake the education of the young Duke of Buccleuch.

He travelled with his pupil abroad for about three years, chiefly in France, where he became personally acquainted with some of the leading men of letters and philosophers of that nation. On his return to Scotland, he retired to Kirkcaldy ; and there, in the society of his mother, intently applied himself for ten years to inquiry and study, the results of which appeared in 1776, in his famous work, *The Wealth of Nations*. During the last twenty years of his life he held the post of Commissioner of Customs in Scotland. A few days before his death, he caused all his unpublished manuscripts to be burned, except a few comparatively short essays.[22]

Personally, Adam Smith was a grave-looking man, of a stout middle height, with prominent features and grey eyes. He was simple, warm-hearted, and kindly in disposition. His intellectual operations were calm, regular, and patient. He mastered a subject slowly but thoroughly, and carried his principles with a steady tenacity and invincible persistence through immense masses of facts and details on to wonderfully successful results. He was gifted with a remarkably strong memory, and had acquired a wide knowledge of English, French, and Italian literature ; indeed the learning which he brought to bear on the subject of his chief work was amazingly various and great. But I will first direct attention to his charming work on Morals.

His *Theory of Moral Sentiments* was first published in 1757 ; and soon became popular, as one of the most interesting and attractive books in the circle of ethical literature. Its distinctive feature is that the operation of human sympathy is the prime factor of moral

[22] These were published in a volume after his death, and consist of six, on the following subjects :—"A History of Astronomy ;" "A History of Ancient Physics ;" "A History of Ancient Logic and Metaphysics ;" "An Essay on the Imitative Arts ;" "On certain English and Italian Verses ;" "On the External Senses." His earliest efforts were a review of Dr. Johnson's Dictionary and *Observations on the State of Learning in Europe*, which appeared in 1755, in a periodical called the *Edinburgh Review*.

sentiments: that mankind are so constituted as to sympathise with each other's feelings, and to feel pleasure in the consonance of these feelings, are the simple facts on which Smith's moral theory is founded.

His treatise is divided into seven parts, in the following order:—(1) of the propriety of action; (2) of merit and demerit, or the objects of reward and punishment; (3) of the foundation of our judgments concerning our own sentiments and conduct; (4) of the effect of utility upon the sentiment of approbation; (5) of the influence of custom and fashion upon the sentiments of moral approbation and disapprobation; (6) of the character of virtue; (7) of systems of moral philosophy. Such is the arrangement of the main heads of his theory, as given in the sixth edition; I will show its general scope, without entering into details.

The influence of Hutcheson and of Hume can be traced in several parts of Smith's work, although his conception and application of the fundamental idea of his system differs from theirs. He is really original in his applications and illustrations. Analytically, his treatise is not remarkable; its merits rather lie in the practical and hortatory discourse, in the eloquent criticisms of character, and the fine illustrations of virtuous conduct with which it abounds, and are presented in a naturally copious, easy, flowing, and fascinating style. The chief blemish of his style is an excess of language—a running into redundance.

In Smith's time the chief questions agitated, touched the foundation of morality—the standard of right and wrong, and the nature of the moral faculty.

He begins by stating that sympathy is the origin and source of moral approbation. "How selfish soever man may be supposed, there are evidently some principles in his nature which interest him in the fortune of others, and render their happiness necessary to him, though he desires nothing from it, except the pleasure of seeing it." Thus, sympathy being one of the original passions of human nature, we may see it in the immediate passing of an emotion from one person to another, even when one does not know the cause of another's grief or joy. Sympathy originates in the imagination, which alone enables us to enter into the sentiments and feelings of others; as we can easily imagine ourselves in the position of another, by simply changing places with him in fancy, by reflecting on what our own sentiments would be in a similar difficulty. Thus we can

feel in some degree what the suffering or joy of another really is; so the feeling of a spectator corresponds to what, by bringing the case of another home to himself, he imagines should be that other's sentiments; since sympathy is based on an original tendency to reflect the emotional states of those around us. We therefore form our moral ideas from observation and reflection on the sentiments and emotions of our neighbours.[23]

Accord of feeling produces pleasure, and consciousness of its absence pain. As the sympathy of others is more necessary for us in grief than in joy, we are more desirous to communicate to others our disagreeable feelings than our agreeable ones. "The agreeable passions of love and joy can satisfy and support the heart without any auxiliary pleasure. The bitter and painful emotions of grief and resentment more strongly require the healing consolation of sympathy." But we are pleased ourselves if we can sympathise with another's success or misfortune, and pained if we cannot.

[23] The following remarks on the operations of sympathy are from Mr. Sully's able, careful, and valuable work, *Outlines of Psychology*, published in 1884:—"Sympathy in its simplest form shows itself in an unconscious reproduction or imitation of another's feeling. The mind of the person affected does not consciously represent or dwell on the feeling which affects him, but simply vibrates in unison with it.

"This tendency manifests itself very early. There is possibly some instinctive knowledge of the signs of feeling, and connected with this, a native disposition to answer smile with smile. . . . But some amount of individual experience is needed for fixing the connection between the several feelings and their external expression. When this is acquired the child tends automatically to take on the moods of hilarity, anxiety, depression, of those about him. This appears to be due to the working of an imitative impulse which leads to the more or less complete adoption of the external attitude, gesture, tone," etc. In a note he says—"That the child has a vague intuitive knowledge of other's feelings seems to be shown by the fact that he responds to the smile of his mother long before his own experience could have taught him to associate pleasurable feeling with this particular facial movement."—Pp. 508-511.

I have for a long period specially observed the early development of conscious feeling, and intelligence in infants; and my observation as to the primitive nature of sympathy agrees with Mr. Sully's view.

But concerning the record of the signs of intelligence which Mr. Darwin has given of several of his own infants, my observation of infants does not tally with his. Taking the ages by months, I have found more signs of intelligence in infants than he did. For instance, I have found unmistakable signs of memory in relation to external and inanimate objects, in infants of three and four months old. Again, with regard to vision, I have observed an infant of four months old, fixing its eyes, and looking steadily at the flag on the top of the mast of a ship, at a considerable distance off.

The amount of pleasure or pain felt by one person in the conduct or feelings of another is the measure of his approbation or the contrary. Thus the sentiments of anyone are just and proper, or the reverse, according as they coincide or not with the sentiments of someone else, who observe them; while his approbation varies according to the degree in which he can sympathise with them. A full accord of sentiments means perfect approbation. Just as a man's sympathetic indignation fails to correspond to mine, according as his compassion falls short of my grief, does he feel a stronger or weaker disapproval of my feelings. Moral and intellectual approbation admits of a similar explanation: for to approve or disapprove of the opinions of others is only to observe their agreement or disagreement with our own; so to approve or disapprove of their feelings and emotions is merely to mark a similar agreement or disagreement between our own and theirs. Thus it appears that the sentiments of each individual are the standard of the correctness of another's, for we can hardly judge of matters of sentiment by any other canon than the correspondent affections in ourselves; and the only measure by which any man can judge of the faculty of another is by his own faculty of a similar kind. On our efforts to sympathise with the feeling and passion of others are founded the gentle virtues of condescension, toleration, and humanity; while the sterner virtues of self-denial and self-command are founded on our effort to attune our passions and feelings to such a pitch as others can approve. The harmonious operation of these two sides of virtue, feeling much for others, and little for ourselves, restraining our selfish, and cultivating our benevolent affections, constitutes the highest perfection of human nature.[24]

He does not directly face the problem of the supreme end of life, nor propose the question whether virtue and morality are only means to the attainment of happiness; but it is pretty evident that he admits the utilitarian view of happiness. He makes no great effort to analyse human happiness, but says that it consists in tranquility and enjoyment; for without tranquility there can be no enjoyment, and with it there is scarcely anything that may not prove a source of pleasure. "In ease of body and peace of mind all the different ranks of life are nearly on a level, and the beggar who suns himself by the side of the

[24] Smith's work must be read itself to attain a full conception of the richness of its illustrations and its attractive character.

highway possesses that security which kings are fighting for. . . . What can be added to the happiness of the man who is in health, who is not in debt, and has a clear conscience? If you would live freely, fearlessly, and independently, never come within the circle of ambition. . . . Power and riches are enormous and operose machines, consisting of springs the most nice and delicate, and which, in spite of all our care, are ready every moment to burst into pieces, and to crush in their ruins their unfortunate possessors."

One of the most interesting parts of his book is the account which he gives of the many fortuitous circumstances which affect the sentiments and moral judgments of men. The most important of these irregular influences spring from the different positions of prosperity and adversity, custom or fashion. As those in high social positions are not exactly judged with the same strictness as the poor and humble, in equal degrees of merit there is hardly anyone who does not show more respect for the rich and great than for the poor and humble; while an equal, or even a far greater, amount of vice and folly is regarded with less aversion and contempt in the former, than in the latter. He explains that this arises in our sympathetic emotions: as these enter more vividly into the joys than into the sorrows of others, we consequently feel far more pleasure in the condition of the rich than in that of the poor; for we are apt to imagine the one class happy, but the other wretchedly unhappy. So, it is agreeable to sympathise with joy, but painful to enter into grief; and where there is no envy in the case, our inclination to sympathise with joy is much stronger than our propensity to sympathise with sorrow; and hence our disposition to admire the rich and powerful, and to despise the poor and lowly.

The longest and concluding division of his treatise is devoted to a review of other systems of moral philosophy; and from his own standpoint he gives an able and interesting account of them.

To sum up according to Smith, conscience is a derived faculty:— 1. We do not begin with a moral consciousness by which we learn to judge of others, but from our judgments about others we acquire a moral consciousness of ourselves. Thus conscience is formed from the central principle of sympathy. 2. The general rules of morality are ultimately founded on experience of what, in particular instances, our moral sentiments approve or condemn; they are not intuitions supplied by nature. Moral rules are formed from experience, by an inductive process, not deduced from a general principle. The sense

of duty and the feeling of obligation are both acquired from experience. 3. He recognises the existence of a benevolent and all-wise Being, who will ultimately redress all injustice; but what the Supreme Being approves must be inferred from the principles of benevolence. Our regard for Him should be shown, not in frivolous observances and ceremonies, but by a course of just and beneficent action.

Although his theory of morals cannot be accepted as satisfactory, still it holds an important place in the history of ethical systems. Its defects have often been pointed out, and it is unnecessary to enter into any further criticism of it. Smith did great service in developing the varied operations and manifestations of the sympathetic principle.

Let us now turn to his other famous work, *The Wealth of Nations*. It consists of five Books, each of which are divided into a number of chapters, but many of the chapters are again divided into parts and articles; and although there is a principle of method in it, still it is defective in the arrangement of materials, and abounds with digressions. Some of the subjects embraced in it are not economical, except in the most general sense; and though this wide range of topics enhances the value of the work, the task of presenting a just account of it is rendered more difficult.

The first book deals with the causes of improvement in the productive powers of labour, and of the order in which its produce is naturally distributed among the people. The treatment of this subject extends to eleven chapters, with a long digression concerning the variations in the value of silver throughout the four preceding centuries; the variations in the proportion between the respective values of gold and silver; and the different effects of the progress of improvement upon three different kinds of rude produce. This digression occupies about a third of the book; but it contains a vast and varied mass of facts and economical information.

Smith begins his great exposition with the simple proposition that labour is the real source of wealth; that the amount of labour expended upon any article is the true measure of its value, and that when this is ascertained as between different commodities, their exchange value will, in the long run, be regulated by it; that all exchangeable commodities are wealth, and not gold and silver only. "What is bought with money or with goods is purchased by labour as much as what we acquire by the toil of our own body. . . .

Labour is the first price, the original purchase money that was paid for all things. It was not by gold or by silver, but by labour, that all the wealth of the world was originally purchased; and its value, to those who possess it and who want to exchange it for some new productions, is precisely equal to the quantity of labour which it can enable them to purchase or command. . . . But, though labour be the real measure of the exchangeable value of all commodities, it is not that by which their value is commonly estimated. It is often difficult to ascertain the proportions between the two different quantities of labour. The time spent in two different kinds of work will not always alone determine this proportion. The different degrees of hardship endured, and the ingenuity exercised, must likewise be taken into account," and many other circumstances.[25]

He explains the division of labour; the origin and use of money; the component parts of the price of commodities; the natural and market price of commodities; wages; the profits of stock; wages and profits in the different employments of labour and stock; inequalities arising from the nature of the employments themselves, and inequalities occasioned by the policy of Europe. Then comes a long chapter on the rent of land, concerning which he is explicit and exceedingly interesting. Among other things he says:—

"As soon as the land of any country has all become private property, the landlords, like all other men, love to reap where they have never sowed, and demand a rent even for its natural produce. The wood of the forest, the grass of the field, and all the natural fruits of the earth, which, when land was in common, cost the labourer only the trouble of gathering them, come, even to him, to have an additional price fixed upon them. He must then pay for the licence to gather them, and must give up to the landlord a portion of what his labour either collects or produces. This portion, or, what comes to the same thing, the price of this portion, constitutes the rent of land."

He states that the landlord exacts from the tenant for the use of a portion of land the highest rent which the latter can afford to pay

[25] Intro., Book I., chap. 5, pp. 31, 32. I uniformly refer to Rogers' edition of *The Wealth of Nations*, in two volumes, published in 1869. Touching labour, Smith further says:—"Labour, therefore, it appears evidently, is the only universal, as well as the only accurate measure of value, or the only standard by which we can compare the values of different commodities at all times and places."—*Ibid.*, p. 38.

in the circumstances, and that he even sometimes demands rent for what is utterly incapable of human improvement. He adduces telling evidence of this, in connection with the kelp trade and the fishing trade, in Scotland, thus :—"Kelp is a species of sea-weed, which, when burnt, yields an alkaline salt, useful for making glass, soap, and several other purposes. It grows in several parts of Britain, particularly in Scotland, upon such rocks only as lie within the high-water mark, which are twice every day covered with the sea, and of which the produce, therefore, was never augmented by human industry. The landlord, however, whose estate is bounded by a kelp-shore of this kind, demands a rent for it as much as for his corn-fields.

"The sea in the neighbourhood of the Islands of Shetland is more than commonly abundant in fish, which make a great part of the subsistence of their inhabitants. But in order to profit by the produce of the water, they must have a habitation upon the neighbouring land. The rent of the landlord is in proportion, not to what the farmer can make by the land, but to what he can make both by the land and by the water. It is partly paid in sea-fish ; and one of the very few instances in which rent makes a part of the price of that commodity is to be found in that country.

"The rent of land, therefore, considered as the price paid for the use of the land, is naturally a monopoly price. It is not at all proportioned to what the landlord may have laid out upon the improvement of the land, or to what he can afford to take ; but to what the farmer can afford to give."[26]

In the second book, he treats of the nature, the accumulation, and the employment of stock ; and through five chapters expounds this division of political economy. He explicates the nature of stocks, the effects of its accumulation into capitals of different kinds ; the effect of the different employments of these kinds of capital ; the nature and operation of money, considered as a particular branch of the general stock of society ; and the different effects which the different employments of capital immediately produce upon the quantity both of national industry and of the annual produce of land and labour.

[26] Book I., chaps. 6, 7, Vol. I., pp. 52, 153, 171, 175, *et seq.* Smith treats the subject of land rent at great length, and with marked ability ; although his exposition in some points is defective, still he comes much nearer the truth than Ricardo, who accounts for the origin of rent on merely abstract and imaginary grounds.

His exposition of these matters is minute and exhaustive. Commencing with the man of the most limited means, or the individual who has no income but what he derives from his labour, he then proceeds to show how the man who possesses stock and capital, after reserving a sufficient quantity for his own immediate consumption, may employ his capital in manufacturing wares, producing goods, and selling them again for a profit. Or it may be employed in the improvement of land, and in many other ways.

Extending his view, he states that the general stock of any civilised country is the same with that of all its inhabitants, and naturally divides itself into three portions, each of which has a different function. The first portion is reserved for immediate consumption, and its characteristic is, that it affords no profit, as it consists of the stock of food, clothes, household furniture, and so on. The second portion of the general stock is the fixed capital, and its characteristic is that it affords a revenue without circulating or changing masters. It consists chiefly of the following things :—(1) All useful machines and instruments which facilitate or abridge labour; (2) all those profitable buildings which are the means of procuring a revenue, not only to their proprietor, who lets them for a rent, but to the person who occupies them, and pays that rent for them—such as shops, warehouses, workshops, halls, farmhouses, and so on; (3) improvements of land, by clearing, draining, enclosing, manuring, and reducing it to the fittest condition for tillage; (4) the acquired and useful abilities of all the members of the community, which represent a considerable amount of fixed capital, yielding income. The third and last portion of the general stock is the circulating capital, and its characteristic is that it affords profit only by circulating or changing masters. He explains the functions of money at great length, and shows that it is merely a circulating medium of convenience and exchange. "The great wheel of circulation, the great instrument of commerce, like all other instruments of trade, though it makes a part of the capital, makes no part of the revenue of the society to which it belongs ; and though the metal pieces of which it is composed, in the course of their annual circulation, distribute to every man the revenue which properly belongs to him, make themselves no part of that revenue." [27]

[27] Book II., chaps. 2, 5 ; Vol. I., pp. 287, 289, 290, 379. Mr. Rogers gives some very interesting notes on capital, of which the following is a part :—"Most writers on political economy, misled by the fact that the advances of the capi-

His third book is the most interesting in the work. It is mainly historical, and deals with the progress of opulence in different nations. He first explains the natural progress of opulence; then the state of agriculture in Europe after the fall of the Roman Empire; the rise and progress of cities after the fall of the Empire; and, finally, how the commerce of the towns contributed to the improvement of the country. On all these subjects, though his evidence was necessarily incomplete, Smith manifested a wonderful sagacity and accuracy in his general conclusions.

Within the compass of little more than forty pages, he presents a luminous exposition of the important topics indicated in the preceding paragraph; and in no part of his work was his peculiar powers and insight exhibited to better advantage. In subjects on which I have made special inquiries, I find his statements, in general, very accurate. But it is in the clear explanation of the causes of change and progress, that this book specially excels.

The fourth book treats on systems of political economy—that is, the mercantile system—and those systems which represent land as either the sole or the principal source of the revenue and wealth of every country. In this book also he dealt with the subject of colonies; the advantages which Europe has derived from the discovery of America, and from the discovery of a passage to the East Indies by the Cape of Good Hope, and treaties of commerce.

He discusses the mercantile system then in vogue with great force, and exposed its errors and inconsistencies most effectively. The prevailing notion was that wealth consisted in money, in pieces of metal, and therefore the great affair always was to get money; to grow rich was to get money, and wealth and money were, in common language, considered exactly synonymous. "In consequence of these popular notions, all the different nations of Europe have studied, though to little purpose, every possible means of ac-

talist are the means by which labour is for a certain present period supported, have given excessive prominence to the doctrine of a 'labour fund,' and have exaggerated the importance of this fund to those who live by wages. The fact is, the capitalist employer is nothing but a representative of the division of labour, or of employments. . . . The capitalist is only a convenience to labourer and consumer. This distinction is very important. There is no fund, except temporarily, between the capitalist and the labourer. Both are paid wages, one for producing, the other distributing; and the consumer pays the wages of both."—Note by Rogers, Vol. I., p. 362.

cumulating gold and silver in their respective countries." Accordingly, they have either prohibited their exportation, or subjected it to a considerable duty. He shows the fatuity of these notions, and exposes the common theory of commerce or protection at great length, and with a weight of argument and a fullness of illustration as yet unmatched. He discusses the subjects of drawbacks, of bounties, the corn trade, and the corn laws; and throughout argues in favour of free trade. [28]

It was in this book also that Smith made his memorable attack upon the East India Company. For once he thoroughly exposed the pretentions of this Company, the mischievous character of its government, and the wrongs which it was committing, in the most fearless and effective style. He showed that something more and higher was required of the rulers of a great country with a dense population, than the mere mercantile spirit of buying and selling—making profits and paying large dividends. He demonstrated that the selfish interests of the Directors of the Company as merchants and traders utterly disqualified them for being wise and just rulers of the vast population under their sway; moreover, all the servants of the Company, from the highest to the lowest, were actuated by the same self-seeking, money-making, and trading spirit. These servants all traded more or less on their own account, as Smith puts it:—

"All the members of the administration, besides, trade more or less upon their own account, and it is vain to prohibit them from so doing. Nothing can be more foolish than to expect that the clerks of a great counting-house at ten thousand miles' distance, and consequently almost quite out of sight, should, upon a simple order from their masters, give up at once doing any sort of business upon their own account, abandon for ever all hopes of making a fortune, of which they have the means in their hands, and content themselves with the moderate salaries which those masters allow them, and which, moderate as they are, can seldom be augmented, being commonly as high as the real profits of the company's trade can afford. In such circumstances, to prohibit the servants of the Company from trading upon their own account can have scarce any other effect than to enable the superior servants, under the pretence of executing their master's orders, to oppress such of the inferior ones as have had the misfortune to fall under their displeasure. The servants natur-

[28] Book IV., chaps. 1, 2, 3, 4, 5; Vol. II., pp. 2-3, 62-63, 108-109, *et seq.*

ally endeavour to establish the same monopoly in favour of their own private trade as of the public trade of the Company. If they are suffered to act as they could wish, they will establish the monopoly openly and directly, by fairly prohibiting all other people from trading in the articles in which they choose to deal; and this is, perhaps, the best and least oppressive way of establishing it. But if, by an order from Europe, they were prohibited from doing this, they will, notwithstanding, endeavour to establish a monopoly of the same kind, secretly and directly, in a way that is more destructive to the country. They will employ the whole authority of the Government, and pervert the administration of justice, in order to harass and ruin those who interfere with them in any branch of commerce, which, by means of agents, either concealed, or at least not publicly avowed, they chose to carry on."

He states that the interests of the masters of the Company are the same as that of the country which they govern, but that the greed of the mercantile spirit prevents them from seeing this. The real interests of the servants of the Company, however, were very different from the interests of the country: the sole aim of these servants was to make fortunes to themselves by whatever means they could. "It is a very singular government in which every member of the administration wishes to get out of the country, and consequently to have done with the government, as soon as he can, and to whose interest, the day after he has left it, and carried his whole fortune with him, it is perfectly indifferent though the whole country was swallowed up by an earthquake." [29]

The fifth and last book of this great work treats of the revenue of the Commonwealth, and in connection with this Smith handles many important subjects, such as the defence of the State, which leads him into a discussion of military organisation and standing armies, the administration of justice, and the expense of public works. In relation to the latter subject, he treats at length on education; and following his usual historical method on this subject, he is exceedingly interesting. He gives a clear and instructive account of educational institutions, the systems of thought taught in the Universities and schools, including the Church and religious instruction. Space will not permit me to follow him into details, but a quotation or two will indicate some of his views.

[29] Book IV., chap. 7, Vol. II., pp. 221-225.

The common course of philosophical education in the greater number of the Universities of Europe was this:—"Logic was first taught; ontology in the second place; pneumatology, comprehending the doctrine concerning the nature of the human soul, and the Deity, in the third; and in the fourth followed a debased system of moral philosophy, which was considered as immediately connected with the doctrine of pneumatology, with the immortality of the human soul, and with the rewards and punishments which, from the justice of the Deity, were to be expected in a life to come: a short and superficial system of physics usually concluded the course.

"The alterations which the Universities of Europe thus introduced into the ancient course of philosophy, were all meant for the education of ecclesiastics, and to render it a more proper introduction to the study of theology. But the additional quantity of subtlety and sophistry, the casuistry and the ascetic morality which these alterations introduced into it, certainly did not render it more proper for the education of gentlemen or men of the world, or more likely to improve the understanding or to mend the heart." [30]

He touches on the question whether the State ought to give any attention to the education of the people, and if so, in what manner should it be attempted. In connection with this, he notices a very

[30] "This course of philosophy is what still continues to be taught in the greater part of the Universities of Europe, with more or less diligence, according as the constitution of each particular University happens to render diligence more or less necessary to the teachers. In some of the richest and best endowed Universities, the tutors content themselves with teaching a few unconnected shreds and parcels of this corrupted course; and even these they commonly teach very negligently and superficially.

"The improvements which, in modern times, have been made in the several different branches of philosophy, have not, the greater part of them, been made in Universities; though some no doubt have. The greatest part of Universities have not even been very forward to adopt those improvements after they were made; and several of these learned societies have chosen to remain for a long time the sanctuaries in which exploded systems and obsolete prejudices found shelter and protection, after they had been hunted out of every corner of the world. In general, the richest and best endowed Universities have been the slowest in adopting these improvements, and the most averse to permit any considerable change in the established plan of education. These improvements were more easily introduced into some of the poorer Universities, in which the teachers, depending upon their reputation for the greater part of their subsistence, were obliged to pay more attention to the current opinions of the world." —Book V., chap. 1, Vol. II., pp. 356-357.

serious result of the minute division of labour—namely, that it reduces the greater part of workers physically and mentally to a comparatively helpless state; in fact, to be incapable of doing anything, save the one or two simple operations to which they have been accustomed. "But the understanding of the greater part of men is necessarily formed by their ordinary employments. The man whose whole life is spent in performing a few simple operations, of which the effects too are, perhaps, always the same, or very nearly the same, has no occasion to exert his understanding or to exercise his invention in finding out expedients for removing difficulties which never occur. He naturally loses, therefore, the habit of such exertion, and generally becomes as stupid and ignorant as it is possible for a human creature to become. . . . The uniformity of his stationary life naturally corrupts the courage of his mind . . . and even the activity of his body, and renders him incapable of exerting his strength with vigour and perseverance in any other employment than that to which he has been bred. His dexterity at his own particular trade seems, in this manner, to be acquired at the expense of his intellectual, social, and martial virtues. But in every improved and civilised society this is the state into which the labouring poor, that is, the great body of the people, must necessarily fall, unless the government takes some pains to prevent it." [31]

He argues that the public should encourage and assist the education of the whole people, but he does not say that it should be made compulsory. He insists upon its utility from various points of view, especially from the political side.

He treats at length on the institutions for the religious instruction of the people in all ages, and his long article on this is especially well worth reading and study. Smith himself was singularly free from prejudice, sectarian or narrow views, and in this respect he is greatly superior to Hume.

The concluding chapters deal with the revenue of the State, taxes, and national debts. His treatment of the general subject of taxation is comprehensive and enlightened, and, like the other parts of his work, full of information, suggestion, and instruction. He has good articles on taxes upon land.

[31] Book V., chap. 1; Vol. II., pp. 364-366. The manufacturing population of our large towns are not quite so bad as they seem to have been in Smith's time; still there is no doubt of the truth of the tendency of the minute division of labour which he points out.

Finally, we may aver that few works have had more influence in stimulating industry, controlling legislation, and promoting reform than the *Wealth of Nations*. But whether this influence will be permanent in its results—whether capital will still continue to dominate labour as it has done in the past—is a social problem, which is constantly coming more and more to the front, and it must ere long be resolutely met.

CHAPTER XXXVII.

Reid, Ferguson, Stewart, and other Writers.

Section I.

Reid.

DR. THOMAS REID attained distinction as an opponent of scepticism on the principles of common sense. He was born on the 26th of April, 1710, in the parish of Strachan, Kincardineshire, where his father was minister for the long period of fifty years. Dr. Reid was educated at Marischal College, Aberdeen, and having studied for the Church, was appointed pastor of the parish of New Machar in 1737. In this position he quietly performed his parochial duties for fifteen years, and gained the esteem of the inhabitants of the parish. In 1752, he was elected Professor of Philosophy in King's College, Aberdeen, an office which he held for eleven years. He was chosen in 1763 to succeed Adam Smith in the Chair of Moral Philosophy in Glasgow, and in this famed seat of learning continued to instruct a large class of students for a period of eighteen years.[1] Thus, Reid performed the functions of a professor for a period of nearly thirty years.

He was gifted by nature with a strong constitution. Although rather under the middle height, his frame was vigorous, and his muscular force unusually great. To these advantages he joined habits of exercise and temperance and an unclouded serenity of temper. "His countenance was strongly expressive of deep and collected thought; but when brightened up by the face of a friend, what chiefly caught the attention was a look of goodwill and kindness."[2]

[1] Stewart's *Account of the Life and Writings of Dr. Reid.*

[2] Stewart's *Account of the Life and Writings of Dr. Reid.* Stewart says:— "The merits of Dr. Reid as a public teacher were derived chiefly from that rich fund of original and instructive philosophy which is to be found in his writings, and from his unwearied assiduity in inculcating principles which he conceived to be of essential importance to human happiness. In his elocution and mode

Dr. Reid's writings consist of—(1) *An Inquiry into the Human Mind on the Principles of Common Sense*, published in 1764; (2) *Essays on the Intellectual Powers of the Mind*, 1785, and *Essays on the Active Powers of the Mind*, 1788; (3) *An Account of Aristotle's Logic;* (4) *An Account of the University of Glasgow*; (5) *An Essay on Quantity.*

The most polished of his works is the *Inquiry into the Human Mind.* It consists of seven chapters, each of which is divided into a number of sections. Excepting the first and the concluding chapters, the work is mainly occupied with the treatment of the five external senses: an analysis of sensation, in the following order:—Smelling, tasting, hearing, touching, and seeing. The work throughout has a somewhat polemical tone, with occasional touches of sarcasm; still it has rare merits. His treatment of the senses is often accurate, though not always. In the history of philosophical opinions he is frequently inaccurate, and sometimes quite wrong; imperfect knowledge of previous systems of thought was his weakest point.

Reid avows that it was Hume's *Treatise of Human Nature* which prompted him to undertake his own *Inquiry into the Mind*, and to reclaim against the principles which had issued in such sceptical conclusions. He desired to place the fundamental principles of knowledge upon firmer grounds, though, in the execution of his task, he often declaims rather than reasons on some of the questions at issue.

His treatment of the external senses, especially of sight and touch, is valuable. He makes true and ingenious remarks on natural language and signs. Such signs he conceived to be of two kinds—(1) those which have their meaning assigned by tacit agreement; and (2) those which, prior to all agreement, have a distinct meaning which man understands by the principles of his nature. Thus "language, so far as it consists of artificial signs, may be called artificial; so far as it consists of natural signs, I call it natural." He argues that, if mankind had not a natural language, they could never have

of instruction, there was nothing peculiarly attractive. He seldom, if ever, indulged himself in the warmth of extempore discourse; nor was his manner of reading calculated to increase the effect of what he had committed to writing. Such, however, was the simplicity and perspicuity of his style, such the gravity and authority of his character, and such the general interest of his young hearers in the doctrines which he taught, that, by the numerous audiences to which his instructions were addressed, he was heard uniformly with the most silent and respectful attention. On this subject, I can speak from personal knowledge; having had the good fortune, during a considerable part of the winter of 1772, to be one of his pupils."—*Ibid.*, sect. 1.

invented an artificial one. He thinks that the signs which are naturally expressive of man's thoughts may be reduced to three kinds—modulations of the voice, gestures, and features. His explanation of this subject is interesting and instructive.[3]

Reid's doctrine of signs is connected with his view of perception. He distinguished perception from sensation, and stated that the simplest operations of the mind do not admit of logical definition. He often states that the sensations are merely signs, and that the objects themselves are the things signified; but he does not maintain that the sign resembles the original. He observes that the same mode of expression is used to denote sensation and perception, but sensation has more of the element of feeling in it than perception: mere sensation consists in its being felt and in nothing else; when it is not felt, it is not. Thus a sensation of pain signifies no more than the feeling of pain: the agreeable odour of a rose considered by itself is a pure sensation, which affects the mind in a certain way; and this affection of the mind may be conceived, without any thought of the rose. This doctrine, according to Reid, is applicable to every other mere sensation.[4]

On the other hand, perception, as understood by Reid, has always an external object, or an object distinct from the act by which it is perceived—an object which may exist whether it be perceived or not. He maintained that we have an immediate perception, a direct intuition of the primary qualities of bodies. Our senses give us a direct and distinct notion of these qualities, as to what they are in themselves; but of the secondary qualities of bodies, our senses give us only a relative and obscure notion.

An act of perception of an external object he thus describes:—(1) "We have some conception or notion of the object perceived; (2) a strong and irresistible conviction and belief of its present existence; (3) that this conviction and belief are immediate, and not the effect of reasoning." He also distinguishes perceptions into two classes—those which are original, and those which are acquired by experience.[5]

Thus Reid's doctrine of perception seems to be explicit. It has to be observed, however, that in his accounts of the views of other philosophers, and in his criticisms on them, he did not search out the

[3] Hamilton's *Reid*, Vol. I., pp. 95-96, 117-118, *et seq.*

[4] *Ibid.*, Vol. I., p. 182, *et seq.*; and in *Essays on the Intellectual Powers*, p. 310.

[5] *Ibid.*, Vol. I., pp. 313-314, 258.

various theories of representative or mediate perception. This lack of exhaustive discrimination unintentionally led him into some mistakes which partially vitiated his criticisms of the doctrines of other philosophers, and rendered even the cardinal point of his own doctrine doubtful; for some hold that he is an idealist, and others that he is a realist. A brief explanation of this seems to be requisite.

1. First, then, some philosophers admit an immediate knowledge of a not-ego, but not of an external not-ego; while they do not limit the immediate knowledge of the mind to its own states, yet conceiving it impossible that the external reality can be brought within the sphere of consciousness, they suppose that it is represented by an image, numerically different from the mind, but placed somewhere, either in the brain or mind, within the sphere of consciousness. 2. Others deny to the mind any consciousness of a not-ego at all, and hold that what the mind immediately perceives, and mistakes for an external object, is merely the ego itself peculiarly modified. Each of these chief theories of a representative perception, admits of several subordinate varieties.

Thus, taking the first of the above hypotheses, it is subdivided according as the immediate object of perception is viewed—(1) as material, (2) as immaterial, (3) or as neither, (4) or as both, as something physical, as propagated from the external object, as generated in the medium or as fabricated in the mind itself; and the latter either in the intelligent mind or in the animal life, as infused by God or by angels, or as identical with the divine substance—as in the system of Spinoza, and in other pantheistic theories. In the second, the representative modification has been sometimes viewed as a mere product of the mind itself; or as innate, and so independent of any mental energy.[6]

Now Reid never adequately distinguished these views of representative perception, either in their historical relation or as possible in theory, but directed his attacks against what he usually calls the "common theory of ideas," which was merely one of the cruder forms of the representative theory of perception; and thus it happens that his onslaughts on Berkeley and Hume are often misdirected and ineffective, as he did not establish the fact of the two cognitions, the

[6] Hamilton's *Reid*, Vol. II., pp. 816-819; *Lectures on Metp.*, Vol. II., pp. 29-30.

presentative and the representative, single out their contents or evolve their conditions; and, in particular, did not show which of these was the kind of cognition competent in our perception of the external world. He failed to observe that representation is possible under two forms—the egoistical and the non-egoistical; and each of which, if perception be reduced to a representative faculty, affords premises equally available to the absolute idealist and the sceptic. Hence he was led into various inconsistences of a historical character, especially in the exposition of his own doctrine of perception.[7]

Yet, notwithstanding these defects of development and exposition, Reid performed good service to psychology by banishing the imaginary images interposed between perception and its objects.

Having indicated Reid's view of perception, I proceed to give a brief account of his treatment of the other phenomena of the mind. He divides the mental phenomena into the intellectual powers and the active powers; and he classified the intellectual powers thus:—(1) The External Senses; (2) Memory; (3) Conception or Simple Apprehension; (4) Abstraction; (5) Judgment—First Truths; (6) Reasoning; (7) Taste. He distributed the active powers into three parts:—I. Mechanical principles of actions—(1) Instinct, (2) Habit; II. Animal principles—(1) Appetites, (2) Desires, (3) Affections; III. Rational principles—(1) Self-love, (2) Duty.[8]

Following the order just indicated, the first essay is devoted to an explication of terms and principles taken for granted. The second essay treats of the external senses, which we have already considered; in it also he reviews at great length the opinions of various philosophers touching the perception of the external world. He then passes to memory, which he treats at length, and affirms that it is an original faculty. He states that by memory we have an immediate knowledge of things in the past,[9] and that it is always accompanied with the belief of that which we remember. Under the head of memory he discusses duration and personal identity. Of the latter he says:—"The conviction which every man has of his identity, as far back as his memory reaches, needs no aid of philosophy to strengthen it; and no philosophy can weaken it, without first producing some degree of insanity. . . . A person is something indivisible, and is what Leibnitz calls a monad. . . . The identity of a person is a perfect identity; wherever it is real, it admits of no degrees, and it is impossible that a person should be in part

the same, and in part different; because a person is a monad, and is not divisible into parts."[10]

He describes conception, and says that conceiving, imagining, apprehending, and understanding are words used to express that operation of the mind called simple apprehension; the having an idea of a thing is, in common language, used in the same sense. He refers to the train of thought in the mind, but he adduces nothing specially original on the association of thoughts and ideas, and in fact he was behind some of his predecessors in this important branch of mental science.

In his essay on abstraction, he explains general words, general conceptions, and the process of classification. Then, under the general heading of judgment, he discusses common sense and first principles. Common sense he regards as a special faculty, and the following quotation will indicate what Reid meant by this phrase:—

"In common language, sense always implies judgment. A man of sense is a man of judgment. Nonsense is what is evidently contrary to right judgment. Common sense is that degree of judgment which is common to men with whom we can converse and transact business. . . . Men rarely ask what common sense is; because every man believes himself possessed of it, and would take it for an imputation upon his understanding to be thought unacquainted with it.

"It is absurd to conceive that there can be any opposition between reason and common sense. It is indeed the first-born of reason, and as they are commonly joined together in speech and in writing, they are inseparable in their nature. We ascribe to reason two offices, or two degrees. The first is to judge of things self-evident; the second to draw conclusions that are not self-evident from those that are. The first of these is the province, and the sole province, of common sense."[11]

Thus Reid considered it the province of common sense to judge of first principles; and he further avers that, to judge of first prin-

[7] Hamilton's *Reid*, Vol. I., pp. 106, 128, 130, 131, 210, 226, 256, 257, 269, 274, 277, 293, 299, 318, 427.

[8] This classification is not founded upon any essential principle of division of mental phenomena.

[9] This is a mistake: we can only have a mediate knowledge of past things or events—that is, only a representative knowledge.

[10] Hamilton's *Reid*, Vol. I. pp. 339-345.

[11] *Ibid.*, Vol. I., pp. 421-425.

ciples require no more than a sound mind free from prejudice and a clear conception of the question. The learned and the unlearned, the philosopher and the day-labourer, are upon a level, and will pass the same judgment, when they are not misled by some bias. He then proceeds to deliver his views of first principles.

Although first principles are self-evident, and cannot be proved by arguments, yet a certain kind of reasoning may be applied in their support:—1. To show that the principle rejected stands upon the same footing with others that are admitted. 2. As in mathematics, a reduction to absurdity may be employed. 3. The consent of ages and nations, of the learned and unlearned, ought to have great authority with regard to first principles, where every man is a competent judge. 4. Opinions that appear so early in the mind, that they cannot be the effect of education, or of false reasoning, have a good claim to be considered as first principles.

He asks whether the conclusions of common sense can be enumerated and digested in such a form as all reasonable men will assent to it. He recognises the difficulties besetting this, and admits that his own enumeration is not perfectly satisfactory. His classification proceeds on the distinction between necessary and contingent truths, and may be summarised thus:—

(A.) Principles of Contingent Truths:—1. Everything that I am conscious of exists.[12] The irresistible conviction of the reality of what we are conscious of is not the effect of reasoning; it is immediate and intuitive, and therefore a first principle. 2. The thoughts that I am conscious of are the thoughts of a being that I call myself, my mind, my person. 3. Those things did really happen that I distinctly remember. 4. Our own personal identity and continued existence, as far back as we remember anything distinctly. 5. Those things do really exist that we distinctly perceive by our senses, and are what we perceive them to be. 6. We have some degree of power over our actions and the determinations of our will. The origin of our idea of power is not easily assigned. Power is not an object of sense or consciousness. We see events as successive, but not the power whereby they are produced. We are conscious of the operations of our minds; but power is not an operation of the mind. It is evidently, however, implied in every act of volition, and in all deliberation and resolution. Likewise, when we approve or disap-

[12] Reid treats consciousness as a special faculty which cannot be defined.

prove, we believe that men have power to do or not to do. 7. The natural faculties, whereby we distinguish truth from error, are not fallacious. 8. Our fellow-men with whom we converse are possessed of life and intelligence. 9. Certain features of the countenance, sounds of the voice, and gestures of the body, indicate certain thoughts and dispositions of mind. The signification of those things we do not learn by experience, but by a kind of natural perception. Children, almost as soon as they are born, may be frightened by an angry or threatening tone of voice. 10. There is a certain regard due to human testimony in matters of fact, and even to human authority in matters of opinion. 11. There are many events depending on the will of man, possessing a self-evident probability, greater or less, according to circumstances; as in men of sound mind we expect a certain degree of regularity in their conduct. 12. In the phenomena of nature, what is to be will probably be like what has been in similar circumstances. Hume has shown that this principle is not grounded on reason, and has not the intuitive evidence of mathematical axioms.

(B.) Principles of Necessary Truths. Regarding those Reid deemed it enough to divide them into classes, and to mention some of each class.

I. Grammatical Principles:—1. Every adjective in a sentence must belong to some substantive expressed or understood. 2 Every complete sentence must have a verb.

II. Logical Principles:—1. Any contexture of words that does not make a proposition is neither true nor false. 2. Every proposition is either true or false. 3. No proposition can be both true and false at the same time. 4. Reasoning in a circle proves nothing. 5. Whatever may be truly affirmed of a genus may be truly affirmed of all its species, and of all the individuals belonging to that species.

III. The Mathematical Axioms.

IV. The Principles of Taste:—1. The fundamental rules of poetry, music, eloquence, and dramatic action; and 2, those of painting have always been the same, and will be so to the end of the world.

V. First Principles in Morals:—1. An unjust action has more demerit than an ungenerous one. 2. A generous action has more merit than a merely just one. 3. No man ought to be blamed for what it was not in his power to hinder.

VI. Metaphysical Principles:—1. The qualities that we perceive

by our senses must have a subject, which we call body, and the thoughts we are conscious of must have a subject, which we call mind. The distinction between sensible qualities and the substance to which they belong is not the invention of philosophers, but is found in the structure of all languages. 2. Whatever begins to exist must have a cause. 3. Design and intelligence in the cause may be inferred with certainty, from marks or signs of them in the effect.

Reid has sometimes been severely handled for his multiplication of first principles; and it must be admitted that his scheme is crude, lacking in discrimination, in logical consistency, and in precision of statement; that it includes various truths as first principles which have no real claim to such a character; still it embodies, in a plain form, a considerable quantity of important truths.

He concludes his exposition of the intellectual powers with an essay on Taste. He notices the force of custom, of fancy, and of casual associations, in modifying taste; and observes that men differ more in their standard of taste than their judgments in matters of truth and error.

His treatment of the active powers of the mind occupies five essays. In the first, he treats of active powers in general; in the second, of the will; in the third, of the principles of action, which he distinguishes as already stated; in the fourth, he discusses the liberty of moral agents; and the fifth and last essay deals with morals.

Touching the sense of duty, he recognises and insists that we have an original moral faculty, which we call conscience. We have the conceptions of right and wrong in human conduct, of merit and demerit, of duty and moral obligation; and by this faculty we perceive some things to be right in human conduct and others to be wrong; that the first principles of morals are the dictates of the same faculty, and that we have the same reason to rely upon those dictates as upon the determinations of our senses, or our other natural faculties.

Reid contends earnestly for the freedom of the will, and discusses the counter doctrine of necessity at length, and with much vigour.[13] In the concluding essay, he attacks the utilitarian theory of morals as

[13] In 1793, *An Essay on Philosophical Necessity* appeared, by Alexr. Crombie, A.M., and in which the views of Dr. Reid on the freedom of the will are adversely discussed and criticised, with much acuteness and ingenuity.

propounded by Hume, and his objections to several points of it were well and effectively directed. He showed that this theory did not recognise or take account of moral rules as established and enforced among men by the dictation of authority, which does not leave to individuals the power of reference to ultimate ends, and that it failed to distinguish between obligatory and non-obligatory useful acts.

To sum up, though Reid's writings are in many points imperfect, yet they have much psychological merit and interest. His intellect was active and vigorous, but not of the highest and widest order; his analytic and critical powers were limited; but he was painstaking and patient in investigation. In truth, the natural bent of his mind drew him more to the concrete and practical side of philosophy than to speculation in the higher region of thought; subjectively, he was not strong. Still his thinking power in certain directions, his native sagacity and force of character, his candour and fairness, and the favourable circumstances in which he was placed, enabled him to found a school, in which some of his disciples have outvied their master in analytic power and speculative thought.

Section II.

Adam Ferguson.

Adam Ferguson is the author of a work on moral and political philosophy, and also of some historical books, which will be noticed elsewhere.[14] He was appointed to the chair of moral philosophy in

[14] He was a son of the minister of Logierait, and was born in 1723. Having passed through the arts classes at St. Andrews, he came to Edinburgh to study for the Church in 1742. Thus he became one of the literary coterie consisting of Robertson, Blair, Home, Carlyle, Hume, and others, who were then students in the University, or living in Edinburgh. In 1745, he was offered a chaplaincy to the 42nd Regiment—"The Black Watch," and though only twenty-two years of age, and having only completed two sessions of the divinity course, he obtained ordination from the General Assembly on account of his high testimonials. He accompanied this regiment to the battle of Fontenoy, and was with difficulty prevented from rushing into action with a broadsword. He remained with his regiment till 1754, and obtained much influence over the Highland soldiers; he took a keen interest in military matters, and gained a know-

the University of Edinburgh in 1764, an office which he held, with some intervals of absence, till the year 1785. In 1766, he published an outline of his lectures for the use of his class, and from these heads and notes he explained his system orally to the students, always keeping his mind open for the reception of whatever new light might dawn upon it. After his retirement from the professorship, he rearranged his lectures into a systematic form, and published them in 1792, under the title of *Principles of Moral and Political Science.* In his preface he says:—"Many, no doubt, may be conscious, that in a continued pursuit of the same subject for so long a time, they themselves could have done better; but in this, it is to be regretted, that they have not done so: For in this field there is room for many labourers; and the subject, though never new, is always interesting. It is so in the specimen of every particular life; in the history of every particular age or nation, and even in the lucubrations of every faithful transcriber of what nature suggests.

"Although, therefore, an author may have been preceded by men of distinguished ability in former or in present times, it implies no

ledge of them which was afterwards of use to him as a historian. He gave up the idea of becoming a minister, as he felt that he had not the requisite qualities for a popular preacher.

Having returned to Edinburgh, he was appointed to succeed Hume as Librarian of the Advocates' Library in 1757; but after a few years, he resigned this post, and became tutor to the sons of Lord Bute. In July, 1759, he was appointed to the chair of natural philosophy in the University of Edinburgh, and by the month of October he was ready to meet his class, which drew from Hume the remark, that "Ferguson had more genius than any of them, as he had made himself so much master of a difficult science—viz., natural philosophy—which he had never studied but when at college, in three months as to be able to teach it." He occupied this chair for five years, and it is recorded that he gave universal satisfaction, by rendering his subject attractive and popular. He published a short summary of his course for the use of his class. —Sir A. Grant's *Story of the University of Edinburgh,* Vol. II., pp. 349, 350.

A contemporary and friend of Ferguson's says of him:—"He was the son of a Highland clergyman, and had the pride and spirit of his countrymen. . . . He had the manners of a man of the world, and the demeanour of a high-bred gentleman, insomuch that his company was much sought after; for though he conversed with ease, it was with a dignified reserve. . . . He had another talent, unknown to any but his intimates, which was a boundless vein of humour, which he indulged when there was none others present, and which flowed from his pen in every familiar letter he wrote."—*Autobiography of the Rev. Dr. Alexr. Carlyle,* pp. 281-283. 1860.

degree of arrogance to follow even such reapers, in gleaning materials from this inexhaustible field of reflection, on which mankind have been employed from the beginning, and on which they will continue to be employed to the end of time."

This work consists of two parts. The first treats of the most general phenomena in the nature and state of man, and extends to three chapters, which consecutively explain Man's place in the scale of Being; Mind, or the characteristics of Intelligence; and Man's Progressive Nature. Each of these chapters is divided into a number of sections, in which many important questions and interesting subjects are examined and discussed with rare candour and ability. The third chapter is especially attractive, as it explains the gradual progress and organisation of human society, the influence of habit, the progress of political and commercial arts, the pursuits and attainments of science, the fine arts, and the progress of moral apprehension.

The second part contains six chapters, which, under the following headings of a moral and political character, expound the Specific Good incident to Human Nature; the Fundamental Law of Morality, and its immediate Application and Sanctions; Jurisprudence, or Compulsory Law; Touching the Defences of Men; Moral Action, and the characteristics of a virtuous and happy Life; and, finally, Politics. Of these chapters, the first, the second, and the fourth are the most interesting, and present a body of well-digested information and reflection.

Ferguson was a well-informed man, and fairly equipped with a knowledge of the science of his time, as his method and conceptions clearly manifest. His moral ideas were distinct and comprehensive; his conception of human progress was accurate; and he approached nearer to the modern idea of a gradual development of human society and political institutions than any of his predecessors. Although, in some points, he was a follower of Hutcheson and Reid, in others he rose above them, especially in his admission of the idea of perfection in morality, and generally in his grasp of reality and of principles.

For instance, he says:—"Mind, we have reason to believe, predominates in nature; so that, in a comprehensive survey of all that exists, whatever is not mind, would be as nothing. . . . The essence of Almighty God we must conceive as most simple, being that which necessarily exists from eternity. Of His supreme in-

telligence, we have full evidence in the system of nature, and of His distinguishing the opposite conditions of moral good and evil, there is equally irresistible proof." [15]

The following sentences will give an idea of his method :—"Most subjects in nature may be considered under two aspects—under that of their actual state, and under that of a specific excellence, or aspect, of which they are susceptible. Under the first, they are subjects of mere description, or statement of fact; under the second, they are objects of estimation or contempt, of praise or censure. In respect to what men have actually done or exhibited, human nature is a subject of history and physical science. Considered in respect to the different measures of good and evil, of which men are susceptible, the same nature is a subject of discipline and moral science. In treating of man, as a subject of history, we collect facts and endeavour to conceive his nature as it actually is, or has actually been, apart from any notion of ideal perfection or defect.

"In treating of him as a subject of moral science, we endeavour to understand what he ought to be; without being limited, in our conception, to the measure of attainment or failure, exhibited in the case of any particular person or society of men.

"To have an object or purpose, and to employ means for the attainment of it, is the distinctive condition of mind or intelligent being; the first implies will and choice; the second implies energy and power. For man, therefore, to know his province, and to be qualified for his station, requires equally that he should be acquainted with the foundation of both." [16]

Thus the method of investigation in the study of human nature, according to Ferguson, is in the first place to ascertain, on the most comprehensive and exhaustive scale, what man actually has been in the past and what he is now; and then, upon this knowledge, to frame a more reasonable conception of the improvable capacity of man, a juster idea of what he ought to be, and to devise more available and effective moral means for advancing the progress, the happiness, and the perfection of mankind. He insists much on this view, and often returns to it throughout his work.

In accordance with his progressive conception of man, Ferguson at once discarded Hobbes' theory that the state of nature was a

[15] Vol. I., pp. 31, 129. [16] Vol. I., Introd., pp. 1, 2.

continual war. He argues that "a child may be considered apart from his parent, and the parent apart from his child; but the latter could not have existed without the former. And if we trace human society back to its simplest state, even there the society was real—resting upon the fundamental feelings of human nature; and if we trace human thought back to its simplest exertions, even there it was an exercise of understanding and some effort of invention or skill." He also rejected the contract theory of the origin of government, and argued consistently for the historical view of the gradual growth and development of society.[17]

Ferguson discussed the standard of morality at length, and also the supreme end. He admitted only a qualified and limited value to utility as a moral principle, and the same with regard to sympathy. Utility appeared to him to resolve the distinction of right and wrong into a mere difference of tendency or external effect in the actions of men. He avers that sympathy is also inadequate as the principle of moral approbation, and argues on some points conclusively against Smith's theory; but he fully recognised that sympathy is an important factor in the social nature of man.[18]

His own view of the principle of moral approbation is announced thus:—"It is the idea of perfection or excellence which the intelligent and associated being forms to himself, and to which he refers in every sentiment of esteem or contempt, and in every expression of commendation or censure."

If it be said that mankind are not agreed on this point, his reply is:—"The idea of perfection no doubt may be associated with subjects divested of merit; but notwithstanding the effect of such association in warping the judgment, virtue is approved as the specific perfection or excellence of man's nature; and as no one ever inquired why perfection should be esteemed, it is difficult to conceive why we should look for any other account of moral approbation than this."[19]

In many parts of his work the ideal conception of a progress towards perfection is touched upon and illustrated. "Perfection is nowhere to be found short of the infinite mind; but progression is the gift of God to all His intelligent creatures, and is within the competence of the lowest of mankind. . . . Men of humble

[17] Vol. I., pp. 190-197, *et seq.* [18] Vol. II., pp. 57-115, 117-126.
[19] Vol. II., p. 134.

capacity may learn to think justly on these subjects; and as far as wisdom depends on a just conception of familiar objects, it is the nature of created mind in the course of experience and observation to improve its sagacity and to make a continual approach to the highest measure of intellectual ability of which it is susceptible. . . . But the virtue of goodness, whether operating in mere innocence or in beneficence, is surely improvable if not actually acquired by habit." [20]

In reference to the fundamental laws of morality, Ferguson taught "that the first law of morality, relating to the mind and its affections, requires the love of mankind as the greatest good to which human nature is competent." If it should appear, however, that mankind are not agreed as to the kinds of external actions that flow from this principle, nor in the choice of what to expect from the beneficent, it may be asked by what rule is the friend of mankind to conduct himself? His general reply to this question is to the effect that mankind in reality do not often mistake the pernicious for the useful, nor the destructive for that which tends to their own preservation; and so the beneficent man has little difficulty in determining what is in him, a natural effect of benevolence or of good-will to his fellow-creatures.[21]

Section III.

Dugald Stewart.

Ferguson was succeeded in the chair of moral philosophy by Dugald Stewart,[22] who discharged the duties of the chair for a period of twenty-five years with unmatched success. He was a son of Dr. Matthew Stewart, professor of mathematics in the University of Edinburgh, and was born in his father's house in the old college buildings. When eight years of age, he was sent to the High School of Edinburgh, and at thirteen he entered the University and attended the arts classes. But with the object of completing his philosophical education, at the age of eighteen he went to Glasgow and studied a

[20] Vol. II., p. 403.

[21] Ferguson died in 1816, having lived to the great age of ninety-three years.

[22] Born in 1753; died in 1828.

session under Dr. Reid, and greatly appreciated the spirit of the doctrines of his master.[23]

In 1771, when only nineteen years of age, Stewart was entrusted by his father, whose health was failing, to teach the mathematical class in the University of Edinburgh; and, notwithstanding his youth, he maintained order and taught well. He was formally appointed to the chair of mathematics in 1775, and held it till 1785, when, as already mentioned, he obtained the chair of moral philosophy, a position more congenial to his taste and aspiration.

According to the best testimony, Stewart was a successful and eloquent professor, and was justly regarded as an ornament of this illustrious University. The lectures which he delivered to his class were declared by those who heard them to be surprisingly touching and elegant. He was a Liberal in politics, a follower and expounder of the economical doctrines of Adam Smith; and several scions of the Whig nobility were placed in Edinburgh under his care and instruction. His teaching, by means of his lectures and his writings, attained a wide influence and contributed to diffuse a taste for elegant literature and liberal opinions in politics throughout Scotland. Many of his pupils rose to eminence in law, politics, and literature.

[23] When speaking of Dr. Reid, Stewart says :—"Among the members of this University (Edinburgh), Mr. Ferguson was the first to applaud Reid's success, warmly recommending to his pupils a steady prosecution of the same plan, as the only effective method of ascertaining the general principles of the human frame, and illustrated happily, by his own profound and eloquent disquisitions, the application of such studies to the conduct of the understanding and the great concerns of life. I recollect, too, when attending, about the year 1771, the lectures of the late Mr. Russell, to have heard high encomiums on the philosophy of Dr. Reid, in the course of those comprehensive discussions concerning the objects and the rules of experimental science, with which he so agreeably diversified the particular doctrines of physics. Nor must I omit this opportunity of paying a tribute to the memory of my old friend, Mr. Stevenson, then professor of logic, whose candid mind at the age of seventy gave a welcome reception to a system subversive of the theories which he had taught for forty years, and whose zeal for the advancement of knowledge prompted him, when his career was almost finished, to undertake the laborious task of new modelling that useful compilation of elementary instruction to which diffidence of his own powers limited his literary exertions.

"It is with no common feelings of respect and gratitude that I now recall the names of those to whom I owe my first attachment to those studies, and the happiness of a liberal occupation superior to the more aspiring aims of a servile ambition."—Stewart's *Account of the Life and Writings of Reid.*

Stewart's teaching was influenced by the current of events and the circumstances of his time; and practical considerations greatly controlled all his opinions and speculations. He was deeply interested in the French Revolution, and intensely moved by the deplorable excesses which sprung out of it. A short quotation from the concluding sentences of his course of lectures on political economy will illustrate this and other features of his teaching:—

"It is not, however, to those who look forward to the pursuits of science that I have addressed myself in these lectures. The greater part of you are probably destined for the active walks of business; and under this impression, I have uniformly endeavoured, so far as I was able, to direct your attention to studies susceptible of a practical application to the great concerns of humanity, whether providence may allot to you the obscure but important duties of a private station, or may be pleased to call you to the great and arduous scenes of public affairs. In either event, I shall follow you with my affectionate wishes through the various fortunes which may await you. And, believe me, nothing will ever give me greater satisfaction than to hear that you have carried into the different departments of life for which you may be destined, these steady principles of religion, of integrity, and of beneficence which can alone render you happy in yourselves and bring blessings to mankind."

This was delivered in 1804, and four years later he concluded the same course with these memorable words:—

"Now, gentlemen, when the connection is to be dissolved which has for some months past subsisted between us, may I not be permitted to express the hope which I am encouraged to entertain by the attention with which you have honoured me:—that long after the period of your academical education, you will recollect with satisfaction those studies of your youth; and that by fixing in some measure your principles concerning the nature, the duties, and the prospects of man, they may contribute, under the various vicissitudes of fortune that may yet await you, to fortify your virtuous resolutions, to elevate your views above the pursuits of a vulgar ambition, and cherish in your minds those habitual sentiments of religion, of humanity, of justice, and of fortitude, which can alone render these talents and accomplishments a source of permanent happiness and honour to yourselves, a blessing to your friends, and a pledge to your country for the perpetuity of that political fabric reared by the hand and cemented by the blood of your ancestors;

now alas! standing alone amid the wreck of surrounding establishments, the last asylum and the only remaining bulwark of the liberties of Europe." [24]

Stewart's works consist of—(1) *Elements of the Philosophy of the Human Mind*, extending to three volumes, which were published separately in the years 1792, 1814, and 1827; but in the interval between the publication of the first and third of these volumes, (2) his *Outlines of Moral Philosophy* appeared in 1793; (3) his *Philosophical Essays* in 1810; (4) his *Dissertation on the Progress of Metaphysical and Ethical Philosophy* in 1814 and 1820; (5) his *Biographical Account of Adam Smith* in 1793, *of Dr. Robertson* in 1796, and *of Dr. Reid* in 1802; (6) his work on the *Active and Moral Powers of Man* appeared in 1828, the year of his death; (7) his *Lectures on Political Economy* which were not prepared for publication by Stewart himself, but drawn up from imperfect manuscripts, and included in Hamilton's collected editions of his works. This edition extends to ten volumes, and to it my references are uniformly made.

When Stewart entered on the duties of the chair of moral philosophy, his mind was well trained to scientific studies, which enabled him to take a comprehensive view of the subject. In the first volume of his *Elements of the Philosophy of the Mind*, he explained at length what he conceived to be the nature, the object, and the utility of mental study; but he did not in any of his writings develop

[24] *Collected Works*, Vol. IX., pp. 452-453, 464. The above passages are admirably calculated for effect; and to have heard them from the lips of Stewart, uttered with all the grace, the gravity, and the dignity which he possessed, must have produced a strong impression.

Some people, however, thought Stewart's political opinions too liberal, and that he had shown rather much favour towards some of his French contemporaries; and he seems to have had such parties in his mind when he composed the following note:—"I think it proper for me now to add, that at the period when this memoir was read before the Royal Society of Edinburgh, it was not unusual, even among men of some talents and information, to confound studiously, the speculative doctrines of political economy, with the discussions concerning the first principles of government, which happened unfortunately at that time to agitate the public mind. The doctrine of free trade was itself represented as of a revolutionary tendency; and some, which had formerly prided themselves on their intimacy with Smith, and on their zeal for the propagation of his liberal system, began to question the expediency of subjecting to the disputations of philosophers the arena of state policy, and the unfathomable wisdom of the feudal ages."—Stewart's *Life of Adam Smith, in Collected Works*, Vol. X. p. 87.

his view of the precise relation of psychology to the philosophical sciences, nor specify the modes of their dependence on each other; although he stated, in general terms, the common relation which the different branches of knowledge bear to the human mind. He indicates his view thus:—"To the philosophy of the mind are to be referred all our inquiries concerning the divisions and the classification of the objects of human knowledge, and also all the various rules, both for the communication and the investigation of truth. These general rules of science, and these general rules of method, ought to form the subject of a rational and useful logic. . . . As a philosophical system of logic would assist us in our particular scientific investigations, by keeping steadily in our view the attainable objects of human curiosity; so, by exhibiting to us the relation in which they all stand to each other, and the relation which they all bear to what ought to be their common end—the advancement of human happiness, it would have a tendency to confine industry and genius to inquiries that are of real practical utility. . . . From such a system of logic, too, important assistance might be expected for reforming the established plan of academical education. It is melancholy to reflect on the manner in which this is carried on in most, perhaps I should say in all the countries of Europe; and that in an age of comparative light and liberty, the intellectual and moral characters of youth should continue to be formed on a plan devised by men, who were not only strangers to the business of the world, but who felt themselves interested in opposing the progress of useful knowledge." [25]

Although he explicitly recognised the contrast of mind and matter, and the branches of science to which the investigation of the opposite phenomena gives rise, still he purposely refrained from attempting their scientific organisation. The leading aim of his efforts was to contribute what he could to general psychology, to diffuse a taste for reflective studies, and to induce a noble and hopeful life in man; thus raising a liberal culture upon the firm basis of self-knowledge.[26]

[25] *Works*, Vol. II., pp. 55-59, 77-80; also Vol I. (Dissert., pp. 477,478) Stewart's remarks on education are still worth reading.

[26] "It is almost unnecessary for me to remark, how much individuals would be assisted in the proper and liberal culture of the mind, if they were previously led to take a comprehensive survey of human nature in all its parts, of its various faculties, and powers, and sources of enjoyment, and of the effects which are produced on these by particular situations. It is such knowledge alone of the

After he had discussed and pointed out the shortcomings in the existing state of things, he enounced his own purpose in the following words:—"I have thus endeavoured to point out and illustrate a few of the important purposes to which the philosophy of the human mind is subservient. It will not, however, I flatter myself, be supposed by any of my readers that I mean to attempt a systematic work on all or any of the subjects I have now mentioned, the most limited of which would furnish matter for many volumes. What I have aimed at has been to give, in the first place, as distinct and complete an analysis as I could of the principles, both intellectual and active, of our nature; and, in the second place, to illustrate, as I proceed, the application of these general laws of the human constitution to the different classes of phenomena that result from them. . . . It will not, therefore, I hope, be objected to me, that I have been guilty of a blameable violation of unity in the plan of my work, till it be considered how far such a violation was useful for accomplishing the purposes for which I write." [27]

In the discrimination of ultimate principles, Stewart manifested admirable sagacity. He called truths "The Fundamental Laws of Belief, or the Primary Elements of Human Reason," meaning by this generally what Reid termed First Principles, or the Dictates of Common Sense. The chief point in the treatment of these principles, in which Stewart differs from Reid, is in relation to mathematical demonstration. He makes no pretension to an exhaustive enumeration of these primary truths, but so far as he goes, his mode of discriminating them is reasonable and satisfactory.[28]

His classification of cognition—the faculties of knowledge—is as follows:—1. Consciousness; 2. External Perception; 3. Attention; 4. Conception; 5. Abstraction; 6. Association of Ideas; 7. Memory; 8. Imagination; 9. Reasoning, including Logic.

This distribution of the intellectual faculties is redundant; and though consciousness is recognised as a separate attribute of the mind,

capacities of the mind, that can enable a person to judge of his own acquisitions; and to employ the most effective means of supplying his defects, and removing his inconvenient habits. . . . But education can never be systematically directed to its proper objects, till we have obtained, not only an accurate analysis of the general principles of our nature, and an account of the most important laws which regulate their operation; but also an explanation of the various modifications and combinations of these principles, which produce that diversity of talents, genius, and character, we observe among men."—Vol. II., pp. 61, 62.

[27] Vol. II,, pp. 89, 90. [28] Vol. III., p. 41, *et seq.*

it receives no satisfactory treatment. Attention, though an important function, is not a separate faculty, as it is acquired by a long series of efforts, and both its exercise and power depends upon the will.

In regard to perception Stewart followed the doctrines of Reid. Conception is explained as a power of the mind which enables us to form a notion of an absent object of perception, or of a sensation formally felt; its function being to give us an exact transcript of what we have felt or perceived. He distinguishes his meaning of the term from imagination, and observes that he followed Reid in this application of the term.

A chapter is devoted to abstraction, which is treated at great length through eight sections, and in which there are many interesting observations. The last section dealt with the use and abuse of general principles in politics, and he endeavours to clear up some of the prevailing misconceptions of the economical system—an ideal theory of society. Stewart himself was always inclined to take a favourable view of the future progress of mankind and the improvement of political institutions; and in this section he directs his efforts to show that such a result was probable.[29]

Two chapters are given to the discussion of the association of ideas, which he considered from two points of view—(1) the influence of association in regulating the succession of our thoughts, and (2) its influence on the intellectual powers and on the moral character, by the more close and indissolvable combinations which it leads us to form in infancy and in early youth. His exposition of association extends to about a hundred pages, and it is interesting and well illustrated by appropriate instances and quotations. He enumerates, as obvious modes of associative connection, Resemblance, Contrariety, Vicinity in time and place; and as less obvious modes, Cause and Effect, Means and Ends, Premises, and Conclusions. In his concluding remarks he avers that "there is good reason for believing that many of the facts which consciousness would lead us to consider, upon a superficial view, as ultimate facts, are resolvable into other principles still more general." [30]

In his treatment of memory, he endeavoured to show that it cannot be resolved into the principle of association, because association presupposes a conservative faculty in the mind itself; but, on the other hand, without the associative principle, our faculty of retention

[29] Vol. II., p. 249. [30] Vol. II., p. 344.

would be of little use. He discusses the varieties of memory manifested in different individuals, the improvement of memory, the connection between memory and philosophical genius; and on all these varied relations of memory Stewart says much that is interesting and instructive. There are three requisites to a good memory—(1) "to be susceptible, (2) to be retentive, (3) to be ready."[31]

To imagination he assigns the function of making a selection of qualities and circumstances from a variety of different objects, and, by combining and arranging these, to form a new creation of its own. He gives it, however, the characteristics rather of a reproductive faculty than of a representative one. He treated imagination in its relation to some of the fine arts, and its relation to taste and genius. He also examined at length the influence of imagination on character and happiness.[32]

In the second volume of his *Elements of the Mind*, he treats of reasoning and deductive evidence; of the Aristotelian Logic; and of the method of inquiry according to the experimental or inductive logic. These mixed logical discussions contain much that is interesting, if not always profound. The third volume of his *Elements* treats of language; of the principle or law of sympathetic imitation; of the varieties of intellectual character; comparisons between the faculties of man and those of the lower animals; and several other interesting subjects. His long chapter on the varieties of intellectual character is exceedingly interesting.

Stewart's volume of philosophical essays contain some of his best compositions, and are partly historical, critical, and literary. More than one half of the volume is occupied with the discussion of topics relating to Taste—the beautiful, the sublime, and allied subjects. Explanations and criticisms of Locke, Berkeley, and the theories of Hartly, Priestly, and Darwin, occupy the other parts of the volume.

He classified the active powers of the mind, the emotions, feelings, and desires thus:—

I. Instinctive Principles of Action.	1. Appetites. 2. Desires = Knowledge, Esteem, Power, etc. 3. Affections = Benevolent and Malevolent.
II. Rational and Governing Principles of Action.	1. Prudence. 2. Moral Faculty. 3. Decency, or regard to character. 4. Sympathy. 5. The Ridiculous. 6. Taste.

[31] Vol. II. p. 365.

[32] Vol. II., pp. 431-435, 450, *et seq.*

His treatment of these varied phenomena of the mind is always interesting, cautious, humane, and marked by sound judgment and sagacity; occasionally original, and, on the whole, the most valuable part of his writings.

He stated the aim of moral inquiry thus:—"The object of moral philosophy is to ascertain the general rules of a wise and virtuous conduct in life, in so far as these rules may be discovered by the unassisted light of nature, that is, by an examination of the human constitution, and of the circumstances in which man is placed." With this end, our inquiries may be arranged under three heads, according as they refer to the intellectual powers of man; to his active and moral powers, or to consideration of man as a member of a political body.[33]

In short, to sum up his chief moral doctrines, he maintained—1. That the Moral Faculty is an original principle of the mind; he argued this point earnestly and at length. 2. He argued against the ethical systems founded on Utility. 3. But he objected strongly to the doctrine which makes morality depend on the will of God. 4. On the question of Freewill, he contends for liberty. 5. Concerning the relation of Morality to Religion, he assumes the benevolence of the Deity, and avers that "when we are convinced that God is infinitely good, and that He is the friend and protector of virtue, this belief affords the most powerful inducements to the practice of every branch of our duty." 6. He elaborately discussed the subject of Happiness, and presented a classification of the most important pleasures under the following heads:—(1) The pleasures of activity and repose; (2) the pleasures of sense; (3) the pleasures of the imagination; (4) the pleasures of the understanding; (5) the pleasures of taste, or fine art.

In forming an opinion upon his merits as a writer, the aims which he had in view, and the circumstances in which his works originated, should be remembered. Stewart cannot be called a great original thinker; but he was an able teacher and a good expositor. Most of his writings could have been much improved by a process of pruning and condensation.

His style is graceful, ornate, and flowing, and enriched by a liberal culture. He had the power of rendering a difficult subject attractive and easily comprehended; yet he was not, in the higher

[33] *Outlines of Moral Philosophy.*

sense, a master of method. Hence his *Dissertation on the History of Mental Philosophy* is very defective in arrangement and in consecutive exposition. In short, the main defects of his style is diffuseness and repetition, and a lack of force and strength, with a singular and lamentable want of brief and orderly recapitulation, at the proper places. He hardly seems to have been aware of the value of a concise and luminous statement at the close or the beginning of a great subject as an aid to the understanding. But after all reasonable deductions, Stewart's works remain a noble monument of his talents, industry, humane culture, and his kindly nature and goodness of heart.

Section IV.

Gerard, Beattie, Campbell, Alison.

Dr. Alexander Gerard was appointed professor of divinity in Marischal College, Aberdeen, in 1759, an office which he held for about twelve years. He is the author of an ingenious *Essay on Taste* which appeared in 1758, and a second edition in 1764. The essay is divided into three parts, and he handled the subject in the following order :—In the first part, Taste is resolved into its simple principles, which consist of the sense or taste of novelty; of the sense of sublimity ; of beauty ; of imitation ; of harmony ; of oddity and ridicule ; and of virtue. In the second part, the formation of taste by the union and improvement of its simple principles is explained. In the third part, the province and importance of taste is discussed.[34]

He began by remarking that "a fine taste is neither wholly the gift of nature, nor wholly the effect of art. It derives its origin from certain powers natural to the mind ; but these powers cannot attain their full perfection, unless they be assisted by proper culture. Taste consists chiefly in the improvement of those principles which are commonly called the powers of imagination, and are considered by modern philosophers as internal or reflex senses,[35] supplying us

[34] To the second edition of this essay were annexed three other essays on the same subject, by Voltaire, d'Alembert, and Montesquieu.

[35] The reference to modern philosophers was to Hutcheson's *Inquiry concerning Beauty and Virtue* and his *Essay on the Passions* ; and Dr. Gerard's *Treatise on Taste* is only one of the many proofs of the influence of Hutcheson's writings in Scotland.

with finer and more delicate perceptions than any which can be properly referred to our external organs." And he reduces these reflex senses in the way indicated in the preceding paragraph.

The subject is well worked out, and his style is exceedingly clear, simple, and easy. He observes that the internal senses are assisted by a delicacy of feeling or passion; and, applying this to the pathetic, he says—"Since, therefore, the pathetic is a quality of so great moment in works of taste, a man who is destitute of sensibility of heart must be a very imperfect judge of them. He is a stranger to those feelings which are of the greatest importance to direct his judgment. If a person possessed all the internal senses in perfection, without delicacy of passion, he could estimate the principal works of genius, only by their inferior qualities. . . . Delicacy of passion may interest a person so much, that he cannot for some time examine a performance with critical exactness; but it gives him exquisite delight in the meantime, and enables him to pass a just sentence at last." [36]

Dr. James Beattie [37] was elected professor of moral philosophy in Marischal College, Aberdeen, in 1760. In 1770, his *Essay on the Immutability of Truth* appeared, which was intended to be a refutation of Hume's scepticism. It is rather a vehement than reasonable production, and strong in passionate assertion, but weak in argument; yet it was popular for a time, and passed through several editions.

He is the author of a work entitled *Elements of Moral Science*, which was published in 1790-93, in two volumes; which are mainly a summary of the lectures on moral philosophy delivered to his class in Marischal College. The work consists of two main divisions:—1. Psychology, under which is included cognition; the active powers—will, feelings, sentiments and passions; natural theology—the existence and attributes of God; and the nature and immortality of the soul. 2. Ethics or moral philosophy, which is followed by economics—the family and domestic relations; then politics; and finally rhetoric and logic. Such is an indication of Beattie's scheme of philosophy, and the method of his system of instruction.

But his treatment of logic is limited to remarks on evidence; rhetoric, however, is treated at length through one hundred and ninety-three pages, and perhaps this is one of the most interesting parts of his work. Beattie's style is orderly, his sentences are

[36] P. 83. [37] Born in 1735; died in 1803.

generally simple, and his line of thought easily followed; but it has not much animation or ornament, and lacks the qualities of strength and incisiveness.

Dr. George Campbell,[38] a minister of the Church of Scotland, became Principal of Marischal College, Aberdeen, in 1759. His first work, *A Dissertation on Miracles*, was published in 1762. It consists of two parts, and presented an examination of the principles advanced by Hume in his *Essay on Miracles*. In the first part, Campbell argues that miracles can be proved by testimony, "and religious miracles are not less capable of this evidence than others;" in the second part, he maintains that "the miracles on which the belief of Christianity is founded are sufficiently attested." These chief points are well and ably worked out. His mode of controversy is candid and generous; and his examination of Hume's principle, for there was but one principle at the root of it—namely, experience—is carried on throughout with admirable fairness and sagacity.

Campbell insists that Hume's chief argument from experience is founded on a false hypothesis; as it supposes testimony to derive its evidence solely from experience, which is not the case. "Testimony, it is acknowledged, is a weaker evidence than sense. But it has been already evinced that its evidence for particular facts is infinitely stronger than that which the general conclusions from experience can afford us. Testimony holds directly of memory and sense. Whatever is duly attested must be remembered by the witness; whatever is duly remembered must once have been perceived. But nothing similar takes place with regard to experience, nor can testimony, with any appearance of meaning, be said to hold of it.

"Thus I have shown, as I proposed, that the author's reasoning proceeds on a false hypothesis.—It supposes testimony to derive its evidence solely from experience, which is false.—It supposes, by consequence, that contrary observations have a weight in opposing testimony, which the first and most acknowledged principles of hnman reason, or, if you like the term better, common sense, evidently shows that they have not.—It assigns a rule for discovering the superiority of contrary evidence, which, in the latitude there given it, tends to mislead the judgment, and which it is impossible, by any explication, to render of real use."[39]

Thus far, it seems Campbell did sway the balance somewhat

[38] Born in 1719; died in 1796.

[39] Part I., sect. 1, pp. 63, 64 (1797).

against Hume's chief principle of estimating evidence. But his dissertation itself must be read, for a full appreciation of the accurate, masterly, and analytic power which it displays. Shortly after it appeared, it was translated into the French, Dutch, and German languages.

Campbell's *Philosophy of Rhetoric*, which appeared in 1776, is a valuable and ingenious work. It was universally recognised as the greatest work on the subject which had appeared since the time of Aristotle. His style is clear and terse, and always manifests a comprehensive grasp of the subject.

The Rev. Archibald Alison[40] was a son of an Edinburgh magistrate, and educated at Glasgow and Oxford, and finally settled down in Edinburgh as an Episcopal minister. He was the father of the well-known historian, Sir Archibald Alison, and also of William P. Alison, an eminent physician and professor in the University of Edinburgh. He himself is the author of *An Essay on the Nature and Principles of Taste*, which appeared in 1790, and has passed through six or seven editions.

It is a pretty elaborate production, and its leading characteristic is an attempt to explain the æsthetic emotions and feelings on the principles of association. It is a work of real merit and value, and has had a considerable influence on subsequent theories of taste and beauty.

[40] Born in 1757 ; died 1839.

CHAPTER XXXVIII.

Dr. Brown—Mackintosh.

SECTION I.

Dr. Brown.

DR. THOMAS BROWN[1] was a native of the parish of Kirkmabreck, in the south of Scotland, where his father was minister; but he died shortly after the birth of the future philosopher, and the family then removed to Edinburgh. There he received the rudiments of his education from his mother, and at the age of seven he was sent by his relatives to school in England. At the age of fourteen he returned, entered the University of Edinburgh, attended the logic class and Stewart's courses of lectures. But in 1798 he was studying law, which, however, he soon relinquished for medicine. He attended the medical classes from 1798 to 1803, when he graduated M.A., having been over ten years a student in the University. Thus Brown had the advantage of the instruction of several eminent professors who then illumined this school.

In 1805, he ventured into what has been called the Leslie controversy, touching the heterodoxy of John Leslie, whom the clergy wished to exclude from the chair of mathematics, on the ground that he had enounced views on causation similar to David Hume's; and in reference to this, Brown published his *Inquiry into the Relation of Cause and Effect*, defending Hume's theory that this relation is merely one of constant antecedence and sequence. He was for some time assistant to Dr. James Gregory; but a wider field for the exercise of his genius awaited him.

It was in the summer of 1810, with the full approval of Stewart himself, that Brown was appointed his colleague and successor in the chair of moral philosophy. He was an interesting, cultured man, with a glowing poetical fancy, combined with other qualities of mind

[1] Born in 1778; died in 1820.

of a rarer form, and he soon became popular. Those who had the good fortune to listen to his lectures were delighted with them; and his career as a professor, though comparatively short, was a brilliant success. His lectures were published shortly after his death in 1820, and attained a remarkable popularity; for before 1852 eighteen editions had been issued in great Britain, and more in America.[2]

They contain a systematic exposition of the philosophy of the human mind. In his introductory lectures he explains the scope and limits of the subject, the relation of the philosophy of the mind to the sciences in general, and to the mental sciences, arts, and moral culture in particular; and he did this in an interesting and attractive manner, well suited to arrest the attention of a youthful audience. He told his class :—"Though I shall endeavour to give as full a view as my limits will permit of all the objects of inquiry which are to come before us, it will be my chief wish to awake in you, or to cherish, a love of those sublime inquiries themselves. There is a philosophic spirit which is far more valuable than any limited acquirements of philosophy; and the cultivation of which, therefore, is the most precious advantage that can be derived from the lessons and studies of many academic years—a spirit which is quick to pursue whatever is within the reach of human intellect, but which is not less quick to discern the bounds that limit every human inquiry, and which, therefore, in seeking much, seeks only what man may learn—which knows how to distinguish what is just in itself from what is merely accredited by illustrious names; adopting a truth which no one has sanctioned, and rejecting an error of which all approve, with the same calmness as if no judgment were opposed to its own."[3]

He devotes several lectures to an explanation of the methods of inquiry in physical science in general, of power, cause and effect, hypothesis and theory; and in these he manifested considerable powers of exposition. He insisted strongly that the method of inquiry in physical science, should also be followed in mental science.

The chief features of Brown's psychology may be briefly indicated thus :—Fundamentally, it is a simple form of idealism, which recognises primary beliefs, while its conception of method is two-fold—(1) The mental phenomena may be viewed as successive, and so suscep-

[2] His lectures extend to one hundred, and, with his unfinished text-book, contain all that he wrote on the philosophy of the mind.

[3] Vol. 1., pp. 14-15, 18-20.

tible of arrangement in the order of their succession, as causes and effects; (2) viewed as complex, and consequently susceptible of analysis; and it was chiefly in the latter relation that he conceived the philosophy of the mind to be a science of progressive discovery. In this relation it still presented an inexhaustible field of inquiry, since the mind is continually forming new combinations, which modify its subsequent thoughts and emotions, the results of which it is the end of mental analysis to reduce to their original elements. In accordance with this conception, he divided the whole phenomena of the mind into two classes—the internal and external affections; the second class is simple and requires few sub-divisions, but the first, as it comprehends the far greater part of the mental phenomena, admits of many sub-divisions, as aids to arrangement and exposition. The first great sub-division of the intellectual class, is into the intellectual states of mind and emotions. But our external affections have their causes in external objects, while the internal affections arise from the previous feelings or emotions of the mind itself; both classes co-exist, and cannot always be considered as arising separately. Hence the different views which have been taken of perception and the existence of the external world.

Brown treated sensation at length, minutely analysing the different tribes of our sensations, as he called them, through all the external senses. After some explanation of the physical side of the process, he follows the same order as Reid in discussing the first four external senses, and he avers that none of our sensations arising through smelling, taste, or hearing afford us any original knowledge of the existence of external things, though we seem to act on such an assumption. He dwells long and interestingly on the early sensations of touch, and rightly assigns to them a priority over all our other sensations. Those qualities of bodies supposed to be made known to us by touch he reduced to two—resistance and extension; and he endeavoured to show that our muscular frame is the organ through which these external qualities are originally felt. He illustrated this view in various ways.[4]

He minutely explained the points touching perception wherein he differed from Reid. In the preceding account of Reid's doctrines, it was shown that he held to an intuitive knowledge of the primary qualities of bodies; Brown maintained that we have no such intuitive

[4] Vol. I., pp. 481, 483, 484.

knowledge of bodies. Speaking of perception in reference to the primary and secondary qualities of bodies, he says:—"In both, it is the effect of the pressure of an external cause, and in both it must be relative only, to that particular cause which produced it; the knowledge of which cause, in the case of extension, as much as in the case of fragrance, is nothing more than the knowledge that there is within us something which is not our mind itself, but which exists, as we cannot but believe, permanently and independent of our mind. . . . What it is, as it exists in absolute independence of our perceptions, we who become acquainted with it, only by those very perceptions, know not in either case. . . . We must still believe our perceptions themselves to be altogether different and distinct from the external causes, whatever they may be, which have produced them; to be, in short, phenomena purely mental, and to be this equally, whether they relate to the primary or the secondary qualities of matter; our notion of extension, in whatever way the Deity may have connected it with the presence of external things, being as much a state of the mind as our notion of sweetness or sound."[5]

He occupies two lectures with a criticism of Dr. Reid's claims in regard to the ideal system of perception. He argues that Reid misunderstood the real opinions of philosophers; that many of them held a view of perception similar to his own; that the supposed difference arose from Reid's having imagined as real "what was merely intended as metaphorical, and overthrown opinions which the authors, to whom he ascribes them, would themselves have been equally eager to overthrow." His attack upon Reid's claims is remarkably virulent.[6] But it should be observed that neither Reid nor Brown himself was strong in the history of philosophical opinions; in the case of both their knowledge of systems and theories of recorded thought was limited and inaccurate. The natural result was that both of them have sometimes fallen into mistakes concerning the views of preceding philosophers and schools. In short, Brown had a stronger passion for quoting poetry than for making wise and accurate references to the doctrines of prior philosophers.

In so far as Brown's psychology is not the issue of his own analytic powers, it is indebted to Reid, to those British thinkers who had given prominence to the principles of associations in explaining

[5] Vol. I., p. 582, *et seq.* [6] Vol. II., p. 51; *Lectures*, 26, 27, 28.

mental phenomena, to Condillac, and a few other French philosophers of the latter part of last century. He was naturally attracted towards those thinkers who had carried analysis to the farthest limits.

He classified the intellectual states of the mind (or cognition) into what he called two generic capacities—(1) simple suggestion and (2) relative suggestion. Simple suggestion meant what is usually termed the laws of association. But he intended to give these a wider application, and therefore adopted a classification which he conceived to be most in accordance with the associative principle. As the influence of this principle itself extends not merely to ideas but to every affection of the mind, all our emotions may be revived in a certain degree by its influence, or may become blended with the ideas or other feelings which awaken them, in the same way as our conceptions of external objects.[7]

His primary laws of simple suggestion are—(1) Resemblance, (2) Contrast, (3) Contiguity; and he reduced what he called the supposed mental faculties of memory, conception, and imagination to simple suggestion. In his exposition of these principles of association, he exhibited great analytic powers and an amazing fertility of illustration. He was also masterly in summarising; and the following quotation, touching his reduction of conception and memory to the principle of suggestion, though abridged, will afford an indication of his powers in this particular :—

"Gentlemen, the inquiries which have occupied us with respect to the phenomena of the principle of suggestion have, I hope, shown you what that principle is, as distinguished from other principles of our mental constitution. It becomes necessary, however, in justification of that simple arrangement which I ventured to propose to you, to consider this principle, not merely in relation to the phenomena which I have included under it, but also in relation to other arrangements, and to show that this one general tendency of the mind is sufficient to account for a variety of phenomena which have been referred to peculiar powers of the understanding. This I endeavoured to prove in my last lecture, with respect to two of these supposed intellectual powers—conception and memory.

"In the first place, I showed that conception, far from being distinguished from suggestion, is only a particular operation of that very principle; what are called the laws of association in relation to our

[7] Vol. II., pp. 189, 197-199, *et seq.*

mere ideas, being nothing more than the general circumstances according to which conceptions follow conceptions in our trains of thought. . . . The power of suggestion is the capacity of the mind by which we are sensible of the varieties of light; and we might as well speak of a power of seeing a particular colour, distinct from vision, as of a power of conceiving the same particular colour, distinct from the general power of the mind that is termed by us suggestion. When I hear the sound of my friend's name, and the conception of my friend immediately arises, there is not in the production of this one mental state the operation both of a power of association and a power of conception, but there is a development of the single capacity of the mind, in consequence of which certain other conceptions arise after certain other conceptions or perceptions. . . .

"After showing our conceptions to be only particular modifications of the general power of suggestion, I proceeded to consider our remembrances, analysing these into two distinct parts—a particular conception of some object or feeling remembered, and the accompanying feeling of a certain relation of priority to our consciousness. The simple conception which forms one of the elements of the remembrance, and differs in no respect from the conceptions that are unaccompanied with the notion of a relation, is of course reducible to the power of simple suggestion, to which all our conceptions are to be referred; the feeling of the relation of priority, which forms its other element, is, like our feeling of every other relation, an effort of that general susceptibility of relation suggested, which we are to consider afterwards. The remembrance, therefore, being a complex feeling, is a proof of these two susceptibilities of the mind, to which we owe the constituent elementary feelings; but it is not a proof of any third power. . . . What we term memory, then, in distinction from mere conception, is not a new power, but merely a complex result of different mental capacities." [8]

He also classified and explained the secondary laws of suggestion. He enumerated nine of these which he regarded as indispensable to account for the variety in the effects of the primary laws. Thus, suggestions are as various as the original feelings have been—(1) of longer or shorter continuance; (2) more or less lively; (3) more or less frequently present; (4) more or less recent; (5) more or less

[8] Vol. II., pp. 384-388.

free from mixture ; (6) that they vary according to the difference of original constitution ; (7) according to differences of temporary emotion ; (8) according to changes produced in the state of the body ; (9) according to general tendencies produced by prior habits. The first four touch rather the momentary feelings themselves than any particular state of the mind of an individual, and have, as it were, a double operation. But each one of these secondary laws alone may be sufficient to change the suggestion, which would otherwise have arisen from the operation of the primary laws ; and it is not wonderful, therefore, that when many of them, as they usually do, concur in one joint effect, the result in different individuals should be so various.[9]

Under his second sub-division of mental phenomena he included all feelings of relation. He employed the term relative suggestion as nearly equivalent to comparison ; and whether the relation was of two or many external objects, or of two or many affections of the mind, the feeling of this, arising in consequence of certain preceding states of mind, is what he called relative suggestion. He classified relations under two heads—(1) those of co-existence, and (2) those of succession. To the first belong the relations of position, resemblance, proportion, degree, and comprehension ; to the second, as the word imports, all those which stand to each other as prior in the order of time. History is merely a succession of facts and events, together with their causes and effects, in the order of time. Thus relations of of succession are either of a casual or of invariable antecedence and consequence.[10]

Concerning the general terms and the early stage of generalisation, Brown sees no reason to doubt that man can reason without language; though it is equally true that, without general terms, reasoning must be very limited and imperfect. He explains the early process of generalisation thus :—"The perception of objects,—the feeling of their resemblance in certain respects,—the invention of a name for these circumstances of felt resemblance,—what can be more truly and readily conceivable than this process ? " He repeats this many times in varied words.[11]

He also endeavoured to reduce the supposed faculties of judgment, reason, and abstraction to relative suggestion, and his reasoning

[9] Vol II., pp. 282-285, *et seq.* [10] Vol. II., pp. 458, 459, 470-472.

[11] Vol. II., pp. 478, 495, 504.

assumed this form :—Relative suggestions are the relations of co-existence and those of succession ; and we can easily separate the feeling of relation from the perceptions or conceptions themselves. We perceive or conceive objects, and feel them to be variously related ; now, with this capacity of relative suggestion, the faculty of judgment may be considered as almost synonymous. Accordingly, he treated it in that light. But reasoning itself is nothing more than a series of judgments—that is, feelings of relations, which are all referable to the capacity of relative suggestion. Abstraction, in like manner, is only a feeling of resemblance, of partial similarity among objects. His classification of the mind may be tabulated thus :—

Mind.
- I. External Affections.
  1. Sensation.
  2. Organic States.
- II. Internal Affections.
  1. Simple Suggestion = Laws of Association
  2. Relative Suggestion.
- Emotions.
  - = Taste.
  - = Moral Philosophy.
- III. Results.
  - Existence of God.
  - Immortality of the Soul.

Brown treats the emotions in detail, under three divisions—1. Immediate, excited by present objects ; 2. Retrospective ; 3. Prospective. In the first division he includes cheerfulness and melancholy, wonder, languor, beauty, sublimity, the ludicrous, moral feeling, love and hate, sympathy, pride, and humility ; in the second, anger, gratitude, simple regret and gladness, remorse and its opposite ; in the third, desires of continued existence, pleasure, action, society, knowledge, power, affection, glory, the happiness of others, evil to others, fear, hope, expectation, and anticipation.

His treatment and analysis of the emotions is pretty satisfactory. In this division of mental phenomena, as in his treatment of the cognitive side of the mind, the influence of Hume may occasionally be traced ; but his own emotional powers were of a warmer and keener cast than Hume's.

In the ethical department of his system Brown partly follows Stewart and Hutcheson, but applies the principle of association more than his predecessors. He contended for a moral faculty—an innate sentiment, and the following will afford an idea of his views :—

" When we think within ourselves,—Is this what we ought to do ?

we do not make two inquiries,—first, Whether the action be right? and then, Whether we should have merit in doing wrong; or demerit in doing what is right for us to do? We only consider whether doing it shall excite in others approbation or disapprobation, and in ourselves a corresponding emotion of complacency or remorse. According to the answer which we give in our hearts, in this respect —an answer which relates to a single feeling of moral approbation,— we shall conceive that we are doing what we ought to do, or what we ought not to do,—and knowing this, we can have no farther moral inquiry to make as to the merit or demerit of doing what is previously felt by us to be right or wrong.

"To have merit, to be virtuous, to have done our duty, to have acted in conformity with obligation,—all have reference to one feeling of the merit,—that feeling of approbation, which attends the contemplation of virtuous actions. . . . To this simple proposition, therefore, we must always come in our moral estimate, whatever division, or varied reference, we may afterwards make. Persons acting in a certain manner, excite in us a feeling of approval; persons acting in a manner opposite to this, cannot be considered by us, without an emotion equally vivid of a different kind. . . . Why does it seem to us virtue to act in this way? Why have we a feeling of obligation or duty, when we think of acting in this way? The only answer which we can give to these questions is the same in all,—that it is impossible for us to consider the action, without feeling that by acting in this way, we should look upon ourselves, and others would look upon us, with approving regard; and that if we were to act in a different way, we should look upon ourselves, and others would look upon us, with abhorrence, or at least with disapprobation. . . . Why do we consider certain actions as morally right,—certain actions as morally wrong? Why do we consider ourselves as morally bound to perform certain actions,—to abstain from certain other actions? Why do we feel moral approbation of those who perform certain actions,—moral disapprobation of those who perform certain other actions? For an answer to all these, I would refer to the simple emotion, as that on which alone the moral distinction is formed." [12]

This is the most definite statement on the moral faculty in his lectures. He seldom uses the term conscience, but leaves his meaning to be gathered from such sentences as these :—"There is then, in the

[12] Vol. III., pp. 568-573, 581, *et seq.*

mind of each individual, a principle which leads him to divide actions into two classes, virtuous and vicious." "There is in our breast a susceptibility of moral emotion; and the principle which thus approves or condemns in us, is the noblest of the ties that connect us with the universal community of mankind." "All our moral sentiments then, of obligation, virtue, merit, are, in themselves, as we have seen, nothing more than one single feeling, variously referred to actions, as future, present, and past. With the loss of the susceptibility of this one peculiar species of emotion, all practical morality would instantly cease." [13]

He gives an exposition of practical morals under the most common heads—(1) Duties to our fellow men; (2) Duties to ourselves; (3) Duties which we owe to the Supreme Being. He treats the family and parental duties with much insight and judgment, and with elevated feeling.

His lectures on the existence of God exhibit fine moral feeling and good intention; but they lack metaphysical grasp and range of intellect. He dwells chiefly upon the design argument, on which he worked wonderfully well. But it is, at best, only a creeping mode of proving the existence of a Supreme Being; and if a belief in God is to continue among men, it must be placed upon higher grounds and arguments than the evidence of mere mechanical design.

Brown also treated at length on the immortality of the human soul; and on this subject his arguments are well worked out, and worthy of attention. On this his psychological theory of the mind was available, and he made a good use of it. His closing lectures are devoted to an exposition of duty of cultivating our moral sentiments, our religious and intellectual nature, in order to render ourselves happy and glorious; and he expatiated eloquently on these themes.

In forming an estimate of Brown's philosophy, we should recall attention to his position, and the aims which he immediately had in view. He was only thirty-two years of age when appointed to teach the moral philosophy class, and ten years after he died in the midst of his work. His lectures were hastily prepared for oral delivery, and many things might be quite appropriately introduced, as merely spoken to the students, with the object of interesting them in the subjects of the course, but which would be out of character in a work

[13] Vol. IV., pp. 152, 158.

deliberately composed and revised for publication. His lectures, as we have them, appear with all the imperfections of being prepared for oral delivery to a class of students ; and it may fairly be assumed that if he had himself prepared them for publication, he would have weeded out most of the poetical quotations, the repetitions, and other blemishes.

His reduction of all the special faculties of cognition to simple and relative suggestion are unfortunate attempts. Conception, memory, and imagination are reduced to simple suggestion ; and judgment, reason, and abstraction, to relative suggestion.

He possessed several of the qualities of a good expositor. His conception of method was clear, his analytic power conspicuous ; and he had the command of a great store of illustrations. His style is florid, and brilliant to excess ; though some fine touches of pathos and eloquent passages occur in his lectures. His choice of words and phrases is sometimes ridiculously inappropriate ; such as these— "tribes of our sensations," "nameless tribes of sensations." In truth, he had not a great command of subjective language ; in this respect he fell far behind Adam Smith. His lectures, however, have furnished many hints to the association school of psychologists ; and in this direction his influence has been considerable.

Section II.

Mackintosh.

Sir James Mackintosh was a native of Inverness-shire,[14] and was educated at King's College, Aberdeen ; thence, in 1784, he proceeded to Edinburgh, and entered on the study of medicine. After taking his medical degree in 1788, he went to London to push his fortune ; but not having obtained a satisfactory practice in the medical profession, he abandoned it. He seems to have entered warmly into the politics and stormy movements of the time, listened with intense interest to the speeches of the leading orators, and soon became a political writer himself. In the spring of 1791, his *Vindiciæ Gallicæ* appeared, which is a glowing defence of the French Revolution against the vehement *Reflections* of Burke. The style of this pamphlet

[14] He was born at Aldourie, on the banks of the Ness, seven miles from Inverness, in 1765, and died in 1832.

is animated, but rather diffuse; yet it soon attained a wide circulation.

Shortly after, he betook himself to the study of the law, and was called to the bar in 1795. In 1799, he delivered a course of thirty-nine *Lectures on the Law of Nature and Nations*, which were subsequently published. He greatly distinguished himself in 1803 by his defence of M. Peltier against a prosecution for libel on Bonaparte. His speech on this occasion was a great effort of forensic eloquence, and seems to have brought him into public notice. Like many other talented and warm-hearted young men, he cherished ambitious literary projects which were never realised.

In 1804, he was appointed Recorder of Bombay. He resided eight years in India; and returned to England in 1812, with an impaired constitution. He was elected a member of Parliament for the county of Nairn, and in the House of Commons he advocated liberal measures. He was appointed professor of law in the East Indian College at Haileybury in 1818.

But his literary projects, though not entirely abandoned, made little progress, owing to a variety of circumstances: his good nature, pleasant humour, wide knowledge, and great conversational power made him a favourite in every society; and thus he was diverted from his real work. He wrote articles for the *Edinburgh Review;* an abridgment of English History down to the Reformation; a *Dissertation on the Progress of Ethical Philosophy*, for the *Encyclopædia Britannica;* and a fragment which he left on the Causes of the Revolution of 1688; which was intended to be his masterpiece, and he had collected a large quantity of materials for it. It is, however, only his Ethical Dissertation which comes properly within the range of this section.

Mackintosh's "Dissertation on the Progress of Ethical Philosophy" is chiefly limited to the seventeenth and eighteenth centuries, although it presented a brief review of earlier systems, and included Stewart and Brown. After a luminous introduction, he devotes a section to preliminary observations on the nature of ethical science, and the methods of examining it. He put the main ethical questions into a definite form; and after remarking on the universality of the distinction between right and wrong, he observes that in the inquiry as to the foundation of morals, the two distinct questions—touching (1) the Moral Faculty, and (2) the Standard of Morality, have seldom been fully discriminated.[15] The first of these problems embraces

[15] *Disst.*, p. 62. 1837.

ethical theory, and also involves certain questions of pure psychology; the second problem relates to the standard or test of morality—of right and wrong in action—the ultimate end. Other important questions arise in the province of morality; but he insists strongly on the necessity of keeping these two chief distinctions steadily in view. His own criticisms of moral systems proceed throughout upon these lines, which gives to them a clearness and simplicity rarely found in ethical disquisition.

He gives a brief sketch of ancient ethics, and of scholastic ethics; and began his account of modern ethics with Grotius and Hobbes. Grotius' work, which was published in 1625, presented the most authentic statement of the general principles of morals which prevailed in Europe, before the writings of Hobbes had occasioned those ethical controversies which more especially belong to modern times. He appreciates Hobbes very fairly; though, of course, he exposes the fundamental errors of his ethical system. Hobbes was the real instigator of most of the ethical inquiries instituted in Britain, till through the early part of the eighteenth century; and the answers to the *Leviathan* alone would form a library.[16]

He then gives an exposition of the views concerning the moral faculties and the social affections, and examines the systems of Cumberland, Cudworth, Clarke, Shaftesbury, Leibnitz, Malebranche, Edwards, and others. The main cause of the imperfect views of morality exhibited in the writings of most of those philosophers was the want of a clear and discriminative insight into the position and significance of the sentiments and feelings in relation to ethical philosophy. Some of them insisted that reason alone was the supreme principle of morality, an assumption long since shown to be utterly untenable.

Those philosophers who are regarded as laying the foundations of a more just theory of ethics, embracing Butler, Hutcheson, Berkeley, Hume, Price, Hartley, Tucker, Paley, Bentham, Stewart, and Brown, were next treated. He gives comparatively short but candid and valuable sketches of the systems of these philosophers; while he introduced his own criticisms under separate headings. Mackintosh was an able, amiable, and mild-tempered man; and I have seen it stated that his critical authority was weakened, "by an amiable propensity to eulogistic declamation." But this, like many other sayings,

[16] *Disst.*, pp. 112-133.

is only half true; as bearing on the point, as well as for its historic interest, I will quote his opening remarks on Bentham and his school:—

"The disciples of Mr. Bentham are more like the hearers of an Athenian philosopher than the pupils of a modern professor, or the cool proselytes of a modern writer. They are in general men of competent age, of superior understanding, who voluntarily embrace the laborious study of useful and noble sciences; who derive their opinions not so much from the cold perusal of his writings, as from familiar converse with a master from whose lips these opinions are recommended by simplicity, disinterestedness, originality, and vivacity; aided rather than impeded by foibles not unamiable, enforced of late by the growing authority of years and fame, and at all times strengthened by that unbounded reliance on his own judgment which mightily increases the ascendant of such men over those who approach him. As he and they deserve the credit of having abandoned vulgar prejudices, so they must be content to incur the imputation of falling into the neighbouring vices of seeking distinction by singularity; of clinging to opinions because they are obnoxious; of wantonly wounding the most respectable feelings of mankind; of regarding an immense display of method and nomenclature as a sure token of a corresponding increase of knowledge, and of considering themselves as a chosen few, whom an initiation into the most secret mysteries of philosophy entitles to look down with pity, if not with contempt, on the profane multitude. . . . Mr. Bentham has at length been betrayed into the unphilosophical hypothesis, that all the ruling bodies who guide the community have conspired to stifle and defeat his discoveries. He is too little acquainted with doubts to believe the honest doubts of others, and he is too angry to make allowance for their prejudices and habits. He has embraced the most extreme party in practical politics; manifesting more dislike and contempt towards those who are more moderate supporters of popular principles than towards their most inflexible opponents."[17]

This is among the warmest statements in his *Dissertation.* Indeed, the spirit in which he criticises the systems of philosophers is unusually calm, just, and candid. I will briefly indicate his own views on some of the chief points of morality.

1. He considered conscience to be a derived faculty—gradually

[17] *Disst.*, pp. 285, 286.

formed, the result of a series of associations. He notes the primary feelings that enters into it, the principal of which are gratitude, sympathy, resentment, remorse, and shame; the secondary causes of its development are education, imitation, general opinion, laws and government. He traces and explains its developments, and finally, conscience attains its distinctive character, and appears in close relation with the will.

2. Touching the standard, he is in favour of utility, with some limitations. Utility is the final justification of right actions, but not the immediate motive in the mind of the agent. He says: "The laws prescribed by a benevolent Being to His creatures must necessarily be founded on the principle of promoting their happiness. It would be singular, indeed, if the proofs of the goodness of God, legible in every part of nature, should not, above all others, be most discoverable and conspicuous in the beneficial tendency of His moral laws."

He remarks that to calculate the general tendency of every kind of human action is a possible and common operation. The general good effects of temperance, justice, fortitude, prudence, benevolence, gratitude, and many others, are the subjects of calculations which, when taken as generalities, are unerring.[18]

3. The supreme good, or theory of happiness, is embodied in his doctrine of the delightfulness of virtuous conduct, by which he proposes to effect the reconciliation of our own good with that of others. "Virtue is an inward fountain of pure delight, and the pleasure of benevolence, if it could become lasting and intense, would convert the heart into a heaven. They alone are truly happy or truly virtuous, that have no need of a motive in regard to outward consequences."

[18] *Disst.*, pp. 229-230, 350-365.

CHAPTER XXXIX.

Hamilton—Ferrier—and Robertson.

SIR WILLIAM HAMILTON,[1] the most learned of all the Scottish philosophers, was the son of Dr. William Hamilton, professor of anatomy in the University of Glasgow, a position formerly held by his grandfather, Dr. Thomas Hamilton. Sir William was the lineal representative to the title of Sir Robert Hamilton, the leader of the Covenanting army at Drumclog, and he manifested at least one feature of the spirit of his ancestors—the energy and will to combat when occasion occurred. His father died when he was an infant, but he received an excellent education. He passed through the arts classes at the University of Glasgow, and studied medicine one session at Edinburgh, having intended at first to follow the hereditary profession of the family. But in 1807, having obtained a Snell exhibition, he went to Oxford. There he entered deeply into the study of ancient philosophy, and finally graduated in the highest class. He returned to Scotland in 1811, studied law, and was called to the bar in 1816.

In 1820, Hamilton became a candidate for the chair of moral philosophy, vacant by the death of Dr. Brown. The contest for the chair was very keen, and finally lay between Hamilton and John Wilson. But Hamilton was a Whig, Wilson a Tory; and as the appointment turned upon political grounds, the majority of the town council of Edinburgh,—the patrons of the chair, voted for Wilson, who accordingly obtained it. It should be observed, however, that neither of the two gentlemen had up to that time published anything which could be referred to as evidence of their special qualifications for the chair of moral philosophy in the University of Edinburgh.[2]

[1] Born in 1788; died in 1856.

[2] In reality, Wilson was quite out of his element in the chair of moral philosophy. But "the chair of moral philosophy in a Scottish university seems to be elastic in its adaptability. Brown made it a chair of psychology; Ferrier, at St. Andrews, a chair of metaphysics; Wilson made it a chair of rhetoric and Belles Letters. It is true that he treated of the passions, virtues, duties, and so on, but he dealt with them in the concrete, with illustrations from literature."—Sir A. Grant's *Story of the University of Edinburgh*, Vol. II., pp. 345-346.

The following year Sir William obtained the chair of civil history in the University of Edinburgh, and he entered on his duties with ardour and energy ; yet his success was comparatively limited. The salary attached to the chair was only one hundred pounds a year. His wide range of historical knowledge enabled him to handle the subject in a comprehensive and attractive manner, and for some years he had a class of about thirty students. He petitioned the Senatus in 1824 to include his subject in the arts curriculum, but the arts faculty gave him no encouragement. Hamilton then, in 1828, enunciated his views to the Royal Commission, but the commissioners, instead of protecting the chair of history, recommended its abolition. In 1833, when the city became bankrupt, the small salary of the chair ceased to be paid, and Hamilton ceased lecturing.[3]

In 1836, Dr. Ritchie resigned the chair of logic and metaphysics, which he had held for a period of twenty-eight years, and four candidates entered the field for the vacant office—namely, Sir William Hamilton, Isaac Taylor, Patrick C. Macdougall, and George Combe, the popular phrenologist. It was seen that the real contest would be between the first two candidates ; and after a hard struggle, of which the issue seemed doubtful, when the final decision was taken, out of thirty-two votes Hamilton had eighteen—a majority of four. Although then in his forty-eighth year, he entered on his new task with all the emotion and ardour of youth, and threw his heart and intellect into the work.

With his exact method and lofty ideal of philosophical style, he felt much difficulty in deciding on the character of the course of lectures on philosophy which would meet the wants of the young students, and at the same time do justice to the subject ; and, after three months of intense thought and reflection, at the opening of the session he had only a few of his lectures written. Thus it happened that his lectures on metaphysics were composed during the first session which he taught. He often sat up nearly all the preceding night preparing his lecture for the next day, with his loving wife by his side acting as his amanuensis. These lectures being composed in such circumstances, and solely designed for the instruction of his own

[3] This chair of civil history continued in an anomalous position, though sometimes held by able men, such as Professor Ferrier and Cosmo Innes, until 1862, when the Executive Commission changed the title of the chair to that of history, and then made the lectures of the professor on constitutional law and history necessary for a degree in law.

class, it is not surprising that they may not at all points present a consistent and complete exposition of his philosophical views; still, so far as they go, they may be fairly assumed to contain a reliable statement of his chief doctrines. His lectures on logic were composed during the next session, and under the same pressure as the former course.

Hamilton greatly felt the want of text-books suitable for his purposes, so he resolved to edit an edition of Reid's works, and projected a new work on logic. It has been affirmed by some that the dedication of his powers to the service of Reid was a great mistake, that he should have built entirely upon his own foundation. Be this as it may, the form of exposition which he selected was in some respects unfortunate. His numerous footnotes to Reid's works were written as the text was passing through the press in 1837 and 1838, and the supplementary dissertations to the end of D were written and stereotyped in 1841 and 1842.

But, in 1838, a quarrel arose between Hamilton and the town council of Edinburgh about his lectures, which had the effect of preventing him from delivering a separate and more advanced course of lectures on metaphysics.[4] Then his brother died, to whom he was warmly attached. Next came the threatened disruption of the Church of Scotland, which he struggled hard to avert; and in 1844, in the midst of his arduous labour and duties, a severe paralytic stroke almost deprived him of the use of his right side for the rest of his life. Though he partly recovered, and his mental faculties seemed unimpaired, he never regained his former energy and health.[5]

So when his edition of Reid's works was issued in 1846, it still remained incomplete; one of his supplementary dissertations breaking off in the middle of a sentence; and although afterwards added to, it was never completed. The fragmentary materials which his editors collected and published, after his death, form but a small portion of what Hamilton originally intended to present; while only an outline of his projected work on logic ever appeared. All hope of revising his lectures seems to have been relinquished, save by occasional oral

[4] "It was a loss to the University that Sir W. Hamilton's separate class in metaphysics was put a stop to; but this was due to his own uncompromising temper, as well as to the somewhat ignorant interference of the town council."—Sir A. Grant's *Story of the University of Edinburgh*, Vol. II., pp. 62-65. I may add that it was a loss to the nation and to philosophy.

[5] Veitch's *Memoir of Sir W. Hamilton*, pp. 266, 270, 278, *et seq.*

interpolations. But he continued to lecture and instruct his classes, though sometimes an assistant read his lectures, when the effort of delivery had become too painful for himself. He expired shortly after the close of the session of 1856, tended in his last moments by his faithful wife, and surrounded by his children.

Hamilton was much beloved by his pupils; and all who called on him for information were kindly treated. Although his temper was warm and sometimes easily roused; on the whole, however, his life was a noble struggle; and, if he occasionally manifested an impatience of ignorant opposition, it was only natural and human. Yet, in one or two of his controversies with opponents of his special doctrines, his vehemence passed the limits of fair discussion.

His writings consist of:—1. Sixteen articles contributed to the *Edinburgh Review*, chiefly on philosophy, education, University reform and methods of teaching, and on literature; the first of these appeared in 1829, and he republished the whole of them in 1852, with large additions. 2. His notes and supplementary dissertations to Reid's works. 3. His lectures on metaphysics. 4. His lectures on logic. All his writings bristle with quotations and references to the views of previous thinkers; his erudition was vast and varied.

In order to give his views the justice to which they are well entitled, and to mark the gratitude for his memory which I warmly feel,[6] I will indicate the lines on which his philosophy may be justly appreciated and fairly expounded. The first requisite is to understand the purpose of a writer's works, and in the case of Hamilton, to take special account of the immediate aims which he had in view; guided by these considerations, I will begin the exposition of his system with his lectures on metaphysics—his psychology, then the philosophy of the conditioned, and close with his logic. The fundamental principles are these:—(1) His peculiar view of the end of speculation; (2) his theory of external perception—natural realism; (3) his doctrine of *a priori* laws or native notions of the mind; (4) his philosophy of the conditioned; (5) his conception of logic, and the peculiarities of his logical system.

[6] I never had the gratification of even seeing Sir W. Hamilton; yet I may be permitted to state, that the first philosophical writings which I ever read with interest was his volume of discussions, which I perused shortly after the date of his death. His edition of Reid soon after came into my hands; and his four volumes of lectures, almost immediately after their publication. And I now gratefully record, that his writings first roused me to think for myself.

In his introductory lectures he explained to the students the utility of philosophy on its subjective and objective sides; its absolute utility viewed simply in itself, and its value viewed in relation to other sciences. He endeavoured to impress their minds with just ideas of the importance of philosophy, and to clear away all superficial misconceptions of the end and objects of education. He discussed philosophy as means and ends in relation to the culture and happiness of man. While man himself, being in so far a mean for the glory of God, "must be an end unto himself, for it is only in the accomplishment of his own perfection that, as a creature, he can manifest the glory of his Creator. . . . I say it is manifest that man is by nature necessarily an end to himself—that his perfection and happiness constitute the goal of his activity, to which he tends, and ought to tend, when not diverted from this, his general and native destination, by peculiar and accidental circumstances." In the realities of social life, however, "each man, instead of being solely an end to himself—instead of being able to subordinate everything to that full and harmonious development of his own faculties, in which his real perfection and his true happiness consists—is, in general, compelled to turn himself into the mean towards the accomplishment of some end, external to himself, and for the benefit of others. So the perfection of man as an end, and the perfection of man as a mean or instrument are not only not the same, but in reality they are generally opposed. . . . even admitting, therefore, that the study of the mind is of no immediate advantage in preparing the student for many of the subordinate parts in the mechanism of society, its utility cannot on that account be called in question, unless it be asserted that man 'liveth by bread alone,' and has no higher destination than that of the calling by which he earns his subsistence." [7]

He drew a distinction between the mere possession of truth and intellectual development; by the latter he meant the power acquired through the exercise of the higher faculties of a more varied and vigorous mental activity. This led him to his peculiar view of the end of speculation, and he asks:—"Is truth or is the mental exercise in the pursuit of truth, the superior end? this is perhaps the most curious theoretical, and certainly the most important practical, problem in the whole compass of philosophy. For, according to the solution at which we arrive, must we accord the higher or lower rank

[7] Vol. I., pp. 2, 7.

to certain great departments of study: and, what is of more importance, the character of its solution, as it determines the aim, regulates from first to last the method which an enlightened science of education must adopt."

In practical knowledge it is clear that truth is not the ultimate end; as the knowledge of a moral truth, a political, or a religious one, is of value only as it affords the condition of its exercise. But Sir William further held, "that speculative truth is only pursued, and is only held of value, for the sake of intellectual activity. . . . A truth, once known, falls into comparative insignificance. It is now prized, less on its own account than as opening up new ways to new activity, new suspense, new hopes, new discoveries, new self-gratulation. . . . Accordingly, the sciences always studied with the keenest interest are those in a state of progress and uncertainty; absolute certainty and absolute completion would be the paralysis of any study. . . .

"But if speculative truth itself be only valuable as a mean of intellectual activity, these studies which determine the faculties to a more vigorous exertion will, in every liberal sense, be better entitled, absolutely, to the name of useful, than those which, with a greater complement of more certain facts, awaken them to a less intense, and consequently a less improving, exercise. It is on this ground that I would rest one of the permanent utilities of mental philosophy." This doctrine is stated in other parts of his writings;[8] and he had sounded the range of its consequences pretty definitely.

In his opening lecture he told his class that the communication of knowledge was a high, but not the highest, aim of instruction; and that he would not merely deliver lectures—"By all the means in my power I shall endeavour to rouse you, gentlemen, to the free and vigorous exercise of your faculties; and shall deem my task accomplished, not by teaching logic and philosophy, but by teaching to reason and philosophise."[9]

In these introductory lectures he also explained the nature and comprehension of philosophy, its causes, and the disposition with

[8] Vol. I. pp. 8-13. In the *Discussions* he says:—"We exist only as we energise; pleasure is the reflex of unimpeded energy; energy is the mean by which our faculties are developed; and a higher energy the end of which their development proposes. . . . Speculative truth is subordinate to speculation itself; and its value is directly measured by the quantity of energy it occasions immediately in its discovery, mediately through its consequences" (p. 39).

[9] Vol. I., p. 18.

which it ought to be studied. Touching the method of philosophy, Hamilton affirms that there is only one possible method—a combination of analysis and synthesis, and the purity and equilibrium of these two elements constitute its perfection.

Concerning the divisions of the philosophy of the mind, he adopted, from Kant, the threefold division of mental phenomena; and the whole subject is enounced in these three questions:—1. What are the facts or phenomena to be observed? 2. What are the laws which regulate these facts, or under which these phenomena appear? 3. What are the real results, not immediately manifested, which these phenomena warrant us in drawing?

First, we should investigate the facts; second, discover their laws; and third, ascertain by legitimate inference their ultimate results. Thus we obtain three branches of mental science, which he designates as phenomenal psychology, nomological psychology, and ontology. Each of these chief classes of the phenomena of mind has a science, which is conversant about its laws. But there is no general science of the cognitive faculties; and the only one of these faculties, whose laws form the object matter of a separate science, is the understanding, the faculty of relations, of thought proper—logic, the science of the laws of thought, in relation to the end which our cognitive faculties propose, that is the true. To this head might be referred universal grammar—philosophical grammar, or the science conversant with the laws of language as the instrument of thought.

The science of the laws of our capacities of enjoyment, in relation to the end which they propose, that is, the pleasurable, has no precise name in English. It has sometimes been called the philosophy of taste, the theory of the fine arts, the science of the beautiful and sublime; and on the Continent it has been termed Æsthetic; but none of these are quite appropriate.

The nomology of our exertive powers and tendencies constitute practical philosophy; for it is simply the science of the laws which regulate our will and desire, in relation to the end which our conative powers propose, that is, the good. This, as it treats these laws in relation to man as an individual, or in relation to man as a member of society, will fall to be divided into two branches—Ethics and Politics; and these again admit of various sub-divisions—such as jurisprudence and legislation.

Empirical psychology is limited to the facts afforded in consciousness, considered exclusively in themselves. But these may be such

as not only to be objects of knowledge in themselves, but may also afford us the grounds of inference to something out of themselves. As effects of a peculiar character, they may enable us to infer the analogous character of their unknown causes; as phenomena of particular qualities, they may warrant us in drawing many conclusions regarding the character of that unknown principle, of that unknown substance, of which they are the manifestations. It is true, that the existence of God and the immortality of the soul are not presented to us as phenomena, or as objects of immediate knowledge; still, if the phenomena actually given do inevitably render it requisite, for their rational explanation, then the hypotheses of immortality and of God, we are certainly entitled, from the existence of the former, to infer the reality of the latter. Now, the science which treats of all such inferences of unknown being from its known manifestations, is called ontology, or metaphysics proper.

The following is his tabular view of the distribution of mental philosophy :—

- Mind or Consciousness affords
  - Facts,—Phenomenology. Empirical Psychology.
    - Cognitions.
    - Feelings.
    - Conative powers (Will and Desire).
  - Laws,—Nomology. Rational Psychology.
    - Cognitions,—Logic.
    - Feelings,—Æsthetic.
    - Conative powers
      - Moral Philosophy.
      - Political Philosophy.
  - Results,—Ontology. Inferential Psychology.
    - Being of God.
    - Immortality of the Soul, etc.

Hamilton considered this distribution of philosophy as the simplest and most exhaustive; and he specially marked out the branches which belonged to his course of instruction.[10] In his lectures he

[10] Vol. I., pp. 120-128. As already mentioned, he originally intended to deliver a more advanced course, and the following sentences, bearing on the point, appear in the manuscript of his seventh lecture :—"The plan which I propose to adopt in the distribution of the course, or rather courses, is the following : I shall commence with mental philosophy, strictly so-called, with the science which is conversant with the manifestations of mind—phenomenology or psychology. I shall then proceed to logic, the science which considers the laws of thought; and finally to ontology, or metaphysics proper, the philosophy of results. Æsthetic, or the theory of the pleasurable, I should consider subsequent to logic, and previously to ontology" (p. 128).

treats only one of the three main groups—empirical psychology—and even this he has not treated exhaustively; only cognitions—the cognitive faculties are fully discussed; but one division of the second group is treated in his lectures on logic. Will and desire receive only incidental notice.

A large part of the first volume is occupied with the discussion of Consciousness, which in his system is the primary and fundamental characteristic of mind, and the universal condition of intelligence. He discusses the special conditions of consciousness; its relation to the cognitive faculties; consciousness and attention; the evidence and authority of consciousness; and violations of its authority. Many other interesting questions are discussed, such as the general phenomena of consciousness; whether the mind is always consciously active, or if it is ever unconsciously modified; and an exceedingly interesting lecture on the difficulties and facilities of studying mental science.

While consciousness cannot be logically defined, it may be philosophically analysed. This is effected by observing and holding fast the facts of consciousness, comparing these, and then evolving the universal conditions under which alone an act of consciousness is possible. It is by following this method that we can attain to accurate knowledge of the contents of consciousness.

The nature of the act of consciousness may be shown thus: "When I know, I must know that I know; when I feel, I must know that I feel; when I desire, I must know that I desire. The knowledge, the feeling, the desire, are possible only under the condition of being known by me. For if I did not know that I knew, I would not know; if I did not know that I felt, I would not feel; if I did not know that I desired, I would not desire. . . . The expressions I know that I know, I know that I feel, I know that I desire, are thus translated by: I am conscious that I know, I am conscious that I feel, I am conscious that I desire. Consciousness is thus, on the one hand, the recognition by the mind of its own acts and affections; in other words, the self-affirmation that certain modifications are known by me, and that these modifications are mine. But, on the other hand, consciousness is not to be viewed as anything different from these modifications themselves, but is, in fact, the general condition of their existence within the sphere of intelligence. Though the simplest act of the mind, consciousness thus expresses a relation subsisting between two terms. These terms are, on the one

hand, an I or self, as the subject of a certain modification; and, on the other hand, some modification, state, quality, effection or operation belonging to the subject. Consciousness thus in its simplicity necessarily involves three things: (1) a recognising or knowing subject; (2) a recognised or known modification; and (3) a recognition or knowledge by the subject of the modification." [11]

He explains and illustrates this fundamental characteristic of mind at great length, and with an analytic power and clearness of statement as yet unmatched in the annals of philosophy: "Every mental phenomena may be called a fact of consciousness. But as we distinguish consciousness from the special faculties, though these are all only modifications of consciousness, only branches of which consciousness is the trunk, so we distinguish the special and derivative phenomena of mind from those that are primary and universal, and to give the latter the name of facts of consciousness, as more eminently worthy of that appellation. . . . A fact of consciousness in this sense is a simple, and, as we regard it, either an ultimate or a primary datum of intelligence. It obtains also various denominations; sometimes it is called a principle, sometimes a fundamental law of mind, sometimes a transcendental condition of thought, etc." He insists on its characteristics of ultimate priority and necessity; that, as an ultimate fact, it is also given to us with a belief of its reality. It reveals what it is, but not why or how it is. "To ask how any fact of consciousness is possible, is to ask how consciousness itself is possible; and to ask how consciousness is possible, is to ask how an intelligent being like man is possible. . . . But as we did not create ourselves, and are not even in the secret of our creation, we must take our existence and our knowledge upon trust."

The result of this inquiry concerning consciousness is—(1) The facts which are given in the act of consciousness itself; and (2) the facts which consciousness does not at once give, but to the reality of which it only bears evidence. As to the first class of facts, no doubt can be or ever has been entertained; it is only the authority of these facts as evidence of something beyond themselves, only thus the second class of facts, which become matter of discussion; it is not the reality of consciousness, but its veracity, that may be questioned.[12]

As psychology is only a developed consciousness, a scientific evolution of the facts of which consciousness is the guarantee and

[11] Vol. I., pp. 189, 190-193.

[12] Vol. I., pp. 269-276, *et seq.*, and *Discussions*, p. 62.

revelation ; thus the Positive philosopher has a primary presumption in favour of the elements out of which his system is constructed, whilst the sceptical philosopher must be content to argue back to the falsehood of these elements, from the impossibility which the dogmatist may experience in combining them into the harmony of truth. For truth is one, and the end of philosophy is the intuition of unity. He repeated that:—"Philosophy is a systematic evolution of the contents of consciousness by the instrumentality of consciousness ; it therefore necessarily supposes in both respects the veracity of consciousness." [13]

His theory of attention is stated thus :—" The greater the number of objects to which our consciousness is simultaneously extended, the smaller is the interest with which it is able to consider each, and consequently the less vivid and distinct will be the information it obtains of the several objects. Such being the law, it follows, when our interest in any particular object is excited, and when we wish to obtain all the information concerning it in our power, it behoves us to limit our consideration to that object, to the exclusion of others. This is done by an act of volition or desire, which is called attention. But to view attention as a special act of intelligence, and to distinguish it from consciousness is utterly inapt. Consciousness may be compared to a telescope, attention to the pulling out or in of the tubes in accommodating the focus to the object ; and we might with equal justice distinguish in the eye the adjustment of the pupil from the general organ of vision, as in the mind distinguish attention from consciousness as a separate faculty. Not, however, that they are to be accounted the same. Attention is consciousness, and something more. It is consciousness voluntarily applied, under its law of limitations, to some determinate object ; it is consciousness concentrated."

Thus, though attention is not a special and separate faculty of mind, it is an interesting and important subject, and he proceeds to consider it in its various relations, as a general phenomena of consciousness. As to the number of objects which the mind can attend to at once, Stewart supposed that we could only attend to one thing at one and the same instant ; but Hamilton supposes that consciousness can simultaneously apprehend six objects. Taking this number of objects as the highest which it can embrace at once, the limitation

[13] *Discussions*, p. 85 ; *Lects.*, Vol. I., p. 267.

of consciousness to five, four, three, two, or one, will all be acts of attention, differing only in degree.[14]

Hamilton rightly holds, that even an act of comparison or discrimination supposes that we are able to comprehend, in the unity of consciousness, the different objects to be discriminated. Instead, therefore, of consciousness not being competent to cognise two things at once, it is only possible under this condition.

He distinguishes three kinds of attention: (1) a mere vital and irresistible act, such as when we open our eyes, we cannot by an act of will avert our mind from all perception of sight; (2) an act determined by desire, which, though involuntary, may be resisted by the will; (3) and an act determined by a deliberate volition. It is the third kind of attention which is really of importance in thinking.

He again refers to the law of limitation in relation to attention, and then says:—"But whatever be its relation to the special faculties, attention doubles all their efficiency, and affords them a power of which they would otherwise be destitute. It is, in fact, as we are at present constituted, the primary condition of their activity." [15]

Hamilton's whole account of attention is exceedingly interesting and valuable, and especially what he says of it in its higher degree,

[14] Vol. I., pp. 231-239, *et seq.*

[15] Vol. I., pp. 246-248, *et seq.* Hamilton gives a clear and interesting explanation of the difficulties of commencing real intellectual efforts, the obstacles that must be overcome before the power of concentrated attention, of continuous thinking, is acquired.

It may not be quite out of character to state briefly my own experience on the subject of attention, or the acquired power of concentration. I admit that Hamilton's statement of the difficulties of commencing real intellectual efforts is quite true, so far as it goes; yet it appears that in many circumstances, the numerous difficulties which have to be overcome at the initial stages are greater than what he represents them to be. In my own case the initial stage was extremely difficult; the circumstances were unpropitious to the acquisition of the power of concentrating attention, as I was almost constantly in the midst of bustle, and seldom alone. By a prolonged course of persistent efforts, I gradually acquired a complete power of concentrating my mind, by an act of will, upon whatever subject I wished to investigate. This will be understood, when I state that the whole of this history was written, and the proof sheets revised, upon the counter of my own small shop, in the midst of the clattering of a stirring street, and at the same time attending to customers coming in and out. Thus, though often interrupted, I mentally work on, unconscious of noise. The power of attention, of concentration, and of continuous thinking, essentially depends on the strength of the acquired command of the will.

as a direct act of the will, consummated in the habit of deliberate concentration of thought. His view of this, the highest exercise of mind, is as true as it is lucidly expressed.

Among the general phenomena of consciousness, he discusses the question whether we are always consciously active? and begins by averring that there is no pure activity or passivity in creation: that all things in the universe of nature are in a state of continual action and counteraction, being always active and passive at once. "God alone must be thought of as a Being active without any mixture of passivity, as His activity is subject to no limitation. But precisely because it is unlimited, it is for us wholly incomprehensible."

We are never directly conscious of passivity; so far as we are conscious, we are active; but whether there may be a mental activity of which we are unconscious, is another question. He touches upon the phenomena of dreaming, talking during sleep, and somnambulism, with the view of ascertaining whether the mind be at any moment wholly unconscious. He refers, as usual, to the opinions of other philosophers, but also gives his own personal experience, that the mind remains conscious during sleep.[16]

He also discussed the subject of latent mental modifications. He observes, that the possessions of our mind are not to be measured by its present monetary activities, but by the amount of its acquired habits. Thus one knows a science or a language, not merely when he is making a temporary use of it, but inasmuch as he can apply it when and how he pleases, at the command of his will: and so the greater part of our mental treasures lies always behind the sphere of consciousness, hid in the recesses of the mind; this is the first degree of latency. The second degree of latency exists when the mind contains certain systems of knowledge, or habits of action, which it is wholly unconscious of possessing in its ordinary state, but which are revealed to consciousness in certain extraordinary exaltations of its powers. Such as the abnormal states of madness, febrile delirium, somnambulism, catalepsy, etc., when they may flash out into consciousness, and throw into the shade of unconsciousness those other systems by which they had for long been eclipsed and even extinguished. He insists that the theory of latent modifications enables us to account for some of the most perplexing phenomena of mind.[17]

Sir William's second volume of lectures commenced with his

[16] Vol. I., pp. 310-312, 323-337.

[17] Vol. I., pp. 339-352, 366, *et seq.*

exposition of the phenomena of cognition; and he classified the special faculties of knowledge thus:—

Cognitive Faculties.

I. Presentative,	External	= Perception.
	Internal	= Self-consciousness.
II. Conservative,	= Memory.	
III. Reproductive,	Without Will	= Suggestion.
	With Will	= Reminiscence.
IV. Representative,	= Imagination.	
V. Elaborative,	= Comparison	= Faculty of Relations.
VI. Regulative,	= Reason	= Common Sense.

Such is Hamilton's distribution of the intellectual powers, which he terms the cognitive faculties. He explains distinctly what he meant by a mental faculty,—it is merely a mode of designating a certain class or group of mental energies. In short, all mental powers are only names determined by various orders of mental phenomena; but as these differ from and resemble each other in various ways, various modes of classification may be adopted, and consequently various faculties, in different views, may be the result. "System is only valuable when it is not arbitrarily devised, but arises naturally out of an observation of the facts, and of the whole facts, themselves. On the other hand, to despise system is to despise philosophy; for the end of philosophy is the detection of unity." [18]

1. The presentative faculty on its two sides—perception of external objects, and self-consciousness or reflection, forms the faculty of experience; and it affords us all our contingent knowledge. It enables us to cognise an object, when presented within the sphere of external or internal consciousness; but if our knowledge terminated with this, it would be small indeed. 2. So we have not only a faculty of acquiring knowledge, but also a faculty of retaining it—which is properly called Memory. 3. The reproductive faculty enables us to recall our knowledge out of memory into consciousness; it is the power which regulates the succession of our thoughts, or the laws of mental association. 4. But the general capacity of knowledge renders it requisite that, besides the power of evoking out of unconsciousness one portion of our retained information in preference to another, we have the faculty of representing in consciousness what is

[18] Vol. II., pp. 3-5; also footnotes to Reid, pp. 221, 242, 511.

thus evoked; and this is effected by the representative faculty, Imagination. 5. The four preceding faculties, or varied acts of acquisition, conservation, reproduction, and representation, form, as it were, a subsidiary class of faculties, furnishing the materials to a higher faculty, which elaborates these; this is the Elaborative faculty, Comparison, or the faculty of relations; and its chief functions are conception, judgment, reasoning, abstraction, and generalisation. 6. The last of the faculties of cognition he called the Regulative faculty—reason or common sense, under which is included all notions, principles, and laws, not derived from experience, but native to the mind, being at once the laws which govern the mind and afford the conditions of its capacity of knowledge.[19]

His treatment of perception is somewhat marred by his rather vehement polemic with Dr. Brown; yet his own doctrine may be disentangled from the discussions with which it is mixed up. He is distinguished both as a historian and critic of the theories of perception; but, leaving the historical points as much as possible out of account, his own theory of perception, and his doctrine of Natural Realism, is as follows:—

"The question to be determined is this, Is our perception, or our consciousness of external objects, mediate or immediate?" He gives a general historical account of the views of philosophers touching this subject, discusses and criticises them, with much acuteness and great ability; the objections to natural realism are canvassed; and finally, he takes up the consideration of the general questions of the relation of the senses to the external world, with special reference to the views of Dr. Reid, Stewart, and Dr. Brown. The discussion occupies nearly nine lectures, and the same subject is treated in his Discussions, and in the Supplementary Dissertations to Reid's works.[20]

He explains his own doctrine thus: "The only object ever perceived is the object in immediate contact—in immediate relation with the organ. What Reid and philosophers in general call the distant object, is wholly unknown to perception; by reasoning we may connect the object of perception with certain antecedents—certain causes, but these, as the result of inference, cannot be the object of

[19] Vol. II., pp. 10-26.

[20] I originally intended to present a more detailed account of Hamilton's views concerning the theories of perception, and other points, but want of space has forced me to relinquish this.

perception. The only objects of perception are in all senses equally immediate. Thus the object of my vision at present is not the paper or letters at a foot from my eye, but the rays of light reflected from these upon the retina. The object of your hearing is not the vibrations of my language, nor the vibrations of the intervening air; but the vibrations determined thereby in the cavity of the internal ear, and in immediate contact with the auditory nerves. In both senses, then, the external object perceived is the last effect of a series of unperceived causes. But to call these unperceived causes the object of perception, and to call the perceived effect, the real object, only the medium of perception, is either a gross error or an unwarranted abuse of language. My conclusion is, therefore, that in all the senses, the external object is in contact with the organ, and thus, in a certain signification, all the senses are only modifications of touch. This is the simple fact, and any other statement of it is either the effect or the cause of misconception.

"In the second place—in relation to the number and consecution of the elementary phenomena—it is, and must be, admitted, on all hands, that perception must be preceded by an impression of the external object on the sense. . . . On this point there can be no dispute. But the case is different in regard to the two following. It is asserted by philosophers in general: (1) That the impression made on the organ must be propagated to the brain, before a cognition of the object takes place in the mind,—in other words, that an organic action must precede and determine the intellectual action; and (2) That sensation proper precedes perception proper. In regard to the former assertion, if by this were only meant, that the mind does not perceive external objects out of relation to its bodily organs, and that the relation of the object to the organism, as the condition of perception, must, therefore, in the order of nature, be viewed as prior to the cognition of that relation, no objection could be made to the statement. But if it be intended, as it seems to be, that the organic affection precedes in the order of time the intellectual cognition, of this we have no proof whatever. The fact as stated would be inconsistent with the doctrine of an intuitive perception: for, if the organic affection were chronologically prior to the act of knowledge, the immediate perception of an object different from our bodily senses would be impossible, and the external would thus be represented only in the subjective affections of our own organism. It is, therefore, more correct to hold, that the corporeal movement

and the mental perception are simultaneous after the bodily has terminated,—in place of holding that the mind is connected with the body only at the central extremity of the nervous system, it is more simple and philosophical to suppose that it is united with the nervous system in its whole extent."

Touching the latter assertion, that a perception proper is always preceded by a sensation, though maintained by Reid and Stewart, is more erroneous than the former assertion concerning the precedence of an organic to a mental action. In fact, sensation and perception both exist only as they co-exist. "They do not, indeed, co-exist in the same degree of intensity, but they are really equally original; and it is only by an act, not of the easiest abstraction, that we are able to discriminate them scientifically from each other." [21]

The following is a concise statement of his doctrine of Natural Realism :—1. In an act of external perception, "I am conscious of myself as the perceiving subject, and of an external reality as the object perceived, and I am conscious of both existences in the same indivisible moment of intuition. 2. The knowledge of the subject does not precede nor follow the knowledge of the object; neither determines, neither is determined by, the other. 3. The two terms of correlation stand in mutual counterpoise and equal independence; they are given as connected in the synthesis of knowledge, but as contrasted in the antithesis of existence. 4. Consciousness declares our knowlege of material qualities to be intuitive. Nor is the fact, as given, denied even by those who disallow its truth. So clear is the deliverance, that even the philosophers who reject an intuitive perception find it impossible not to admit that their doctrine stands decidedly opposed to the voice of consciousness, and the natural conviction of mankind." 5. This doctrine of Natural Realism is partly supported upon the distinction of the qualities of matter.[22]

[21] Vol. II., pp. 185-189.

[22] *Discussions,* pp. 53-54 ; also his *Dissertations to Reid's Works.* In short, his *Dissertations to Reid* contain a body of valuable philosophical and critical matter relating to the science of the mind. He has endeavoured to present an exhaustive classification of all the possible theories of perception, and his distinctions, explanations, and critical remarks are admirable specimens of logical power and historic genius. This is especially applicable to his important dissertations on the "Qualities of Matter," of which I had prepared an abstract, and regret that I cannot afford space for it.

Sir William himself says, "that Natural Realism and Absolute Idealism are the only systems worthy of a philosopher ; for, as they alone have any founda-

Having explicated two of the fundamental peculiarities of Hamilton's system—his view of the end of speculation, and natural realism —I resume the exposition of his views of the cognitive faculties.

Through the powers of internal and external perception, we are enabled to acquire information, experience; but this acquisition is not of itself independent and complete. It supposes that we are also able to retain the knowledge acquired, as we cannot be said to obtain what we are unable to keep. Thus the faculty of acquisition is only realised through the faculty of memory. We have here two distinct elementary phenomena, each depending on the other for its realisation; for without a power of acquisition a power of retention could not be exerted, and without the latter the former would be fruitless, for we should lose as fast as we acquired. Further, the faculty of acquisition would be ineffective without the faculties of reproduction and imagination, for though the mind retained beyond the sphere of consciousness a treasury of knowledge, this would be of no avail, if it did not possess the power of reproducing and representing such knowledge in consciousness. Although the faculty of memory would be fruitless without the faculties of reproduction and imagination, we are not to confound these faculties, or to view the act of mind which is their joint result, as a simple and elementary power; while they mutually depend on each other, the faculties of memory, reproduction, and imagination are governed by different laws, and in different individuals are found to vary greatly in their comparative vigour.[23]

Touching memory, Hamilton held that all mental energies must persist and endure; we never wholly lose them, but they become obscure. It is only the more vivid changes which sufficiently affect our consciousness to become objects of its apprehension. Thus we are only conscious of the more prominent series of changes in our mental states; the others remain mostly latent. The law of retention

tion in consciousness, so they alone have any consistency in themselves, . . . The scheme of Natural Realism may be ultimately difficult, for, like all other truths, it ends in the inconceivable; but Hypothetical Realism, in its origin, in its development, in its result, although the favourite scheme of philosophers, is philosophically absurd."—*Dissertations to Reid*, Note C, p. 817.

[23] Vol II., pp. 205-207. Further on he says: "By memory, you will see, is only meant the condition of reproduction; and it is, therefore, evident that it is only by an extension of the term, that it can be called a faculty, that is, an active power . . . it ought perhaps to receive rather the appellation of a capacity" (p. 209).

extends over all the phenomena of mind. Hence a good memory is one main condition of reproduction.

There is probably no mental power in which such extreme differences appear in individuals as in memory. In a good memory two chief qualities are requisite—the capacity of retention and the power of reproduction.[24] To the latter I now proceed.

By the faculty of reproduction, Hamilton meant the process of awakening that which is lying dormant in the memory, as contra-distinguished from the representation of it in consciousness as awakened. He was not satisfied with the term reproductive, because it did not precisely of itself mark what he wished to express. And he was right; for no single term could be chosen which would exactly mark the process and at the same time distinguish it from another closely related process as he wished. "I am not satisfied, I say, with the term reproduction for the process by which the dormant thought or affection is aroused, for it does not clearly denote what it is intended to express. . . .

"The phenomena of reproduction is one of the most wonderful in the whole compass of psychology, and it is one in the explanation of which philosophers have been more successful than in almost any other. . . . The faculty of reproduction is governed by the laws which regulate the association of the mental train, or, to speak more correctly, reproduction is nothing but the result of these laws. Everyone is conscious of the ceaseless succession of thoughts, one thought suggesting another, which again is the cause of exciting a third, and so on. In what manner, it may be asked, does the presence of any thought determine the introduction of another? Is the train subject to laws, and, if so, by what laws is it regulated?

He gives, as usual, an indication of the views of other philosophers touching the laws of mental association, and he himself endeavoured to carry up all the laws of association into the "law of redintegration," which he announced thus:—"Those thoughts suggest each other which had previously constituted parts of the same entire act of cognition. Now, to the same entire or total act belong, as integral or constituent parts, in the first place, those thoughts which arose at

[24] Vol. II., pp. 211-218. I may state that at one period I could repeat a sermon or a lecture the morning after hearing it. Although I state the fact of my own experience, I do not at all approve of such stretches of verbal memory, and many years ago I ceased from making any such efforts, and instead cultivated the reproductive and representative faculties.

the same time, or in immediate consecution; and in the second, those thoughts which are bound up into one by their mutual affinity. Thus, therefore, the two laws of simultaneity and affinity are carried up into unity in the higher law of redintegration of totality; and by this one law the whole phenomena of association may be easily explained." [25]

Herbert Spencer, following some of the lines indicated by Hamilton, insists that the cohering of impressions with previously experienced impressions of the same class is the sole law of association. This is not the only principle which the evolution philosophy has adopted from Sir William's writings; the cast of Hamilton's intellect itself was essentially evolutionary.

Hamilton shows that the processes of representation and reproduction are closely related; though they are discriminated by differences quite decisive. Reproduction operates, in part, at least, out of consciousness; while representation is only realised as far as it is realised in consciousness, the vivacity of the representation being always in proportion to the vivacity of our consciousness of its reality. The energies of representation and reproduction are not always exerted by the same individual in equal intensity, any more than the energies of reproduction and retention.[26]

[25] Vol. II., pp. 227-229, 231-238. In one of his *Dissertations to Reid*, Hamilton gives a "Contribution towards a history of mental suggestion or association;" this, however, deals chiefly with the views of Aristotle and Themistitus. But he also presents an outline of a "theory of mental reproduction, suggestion, or association," setting forth his own views. The outline is more developed in thought than what is given in his lectures, but it was left incomplete.

I.—In it he distinguishes the general laws of mental succession from those of reproduction proper; and of this class he specifies five laws—1. The law of succession. 2. The law of variation. 3. The law of dependence or determined consecution. 4. The law of relativity or integration. 5. The law of intrinsic or objective relativity; under this head he would also include the law of the conditioned.

II. General laws of mental succession, as of reproduction proper—1. The law of repetition. 2. The law of redintegration. 3. The law of preference.

III. Special laws of mental suggestion—1. The law of similars. 2. The law of contrast. 3. The law of coadjacency.

[26] "Some minds are distinguished by a higher power of manifesting one of these phenomena; others for manifesting another; and as it is not always the person who forgets nothing who can most promptly recall what he retains, so neither is it always the person who recalls most easily and correctly who can exhibit what he remembers in the most vivid colours. It is to be recollected,

According to Hamilton's view of the fundamental processes of the mind, the function of representation is simply the energy of the mind in holding up to its contemplation what it is determined to represent. But he distinguishes as essentially different, the representation, and the determination to represent; for the reproductive faculty is the immediate source whence the representative receives both the material and the determination to represent; and the laws which control the reproductive faculty also control the representative. So if there were no other laws in the combination and construction of thought than those of association, the representative faculty would be solely determined in its manifestation by the reproductive faculty; but comparison—the faculty of relations also comes into operation. Comparison plays an important part in determining in what combinations objects are represented. By its aid, the complex groups of phenomena called up by the representative faculty undergo various operations; they are separated into parts, analysed into elements; and these parts and elements are again compounded and combined in innumerable ways. While in all this, the representative faculty—imagination co-operates; as it first exhibits the facts as called up by the laws of association; it then exhibits them as variously arranged by the analysis and synthesis of the comparative faculty, thus acting as a subsidiary both to the reproductive and elaborative faculties. Still, in these operations the imaginative power is often the most active element in the process; it is a condition of the analytic operations, as it holds up the objects in a vivid light to the analytic grasp, that it may observe the various circumstances of relation, and the new reconstruction—the result of its own elaboration.

A vigorous power of imagination—of representing objects, is indispensable in every department of thought; but there are many kinds and degrees of imagination. There is the imagination of abstraction, representing to us certain phases of an object to the exclusion of others; the imagination of reason, which represents a principle in connection with its consequences, the effect in dependence on its cause; the imagination of feeling, which represents the accessory

however, that retention, reproduction, and representation, though not in different persons of the same relative vigour, are, however, in the same individuals, all strong or weak in reference to the same class of subjects. For example, if a man's memory be more peculiarly retentive of words, his verbal reminiscence and imagination will, in like manner, be more particularly energetic." (Vol. II., p. 260.)

images allied to some particular sentiment, which thus confer on it greater compass and intensity ; the imagination of the passions, and so on.[27]

He discusses the elaborative faculty—comparison, or faculty of relations, at length, and in an exceedingly interesting style, under the heads of classification, abstraction, generalisation, judgment, and reasoning. A class of subjects which form the transition from psychology to logic, from the analysis and laws of the mental phenomena, "to the science of thought as thought." In connection with these, he discusses, in his usual historic form, the interesting subjects of nominalism and conceptionalism, and also the curious question as to "the primum cognitum," the first cognition, as it was called in the schools. The latter question assumes this character, Does language originate with general names or proper names ? Did mankind in the evolution of language, and do children in their first applications of it, begin with general terms or with particular words ; or, in other words, does knowledge begin with general notions, or particular notions ? There are many illustrious philosophers on each side of the question. Hamilton himself held that our knowledge neither begins with the general nor the particular, but with the vague and confused, and thence proceeds by degrees to evolve both the general and the particular.[28]

The reduction of complicated processes to greater simplicity, or to a single principle, was a marked feature of Hamilton's intellect; and the following statement touching comparison is an instance in point. "In opposition to the views hitherto promulgated in regard to comparison, I will show that this faculty is at work in every, the simplest, act of mind ; and that from the primary affirmation of existence in an original act of consciousness to the judgment contained in the conclusion of an act of reasoning, every operation is only an evolution of the same elementary process,—that there is a difference in the complexity, none in the nature of the act; in short, that the various products of analysis and synthesis, of abstraction and generalisation, are all merely the results of comparison, and that the operations of conception or simple apprehension, of judgment, and reasoning, are all only acts of comparison, in various applications and degrees."[29]

[27] Vol. II., pp. 263-266. Hamilton holds, that the organs which imagination employs in the representation of sensible objects, are the organs of sense themselves, on which the original impressions were made, and through which they were originally perceived. This is the same as Hobbes' view.

[28] Vol. II., p. 279. [29] Vol. II., pp. 319, 335.

He proceeds to develop and to prove this view of comparison. The process of classification is simply an act of comparison, determined by the necessities of the mind—the nature and limits of its powers. In classifying, the mind greatly depends on language for its success, on general names, general and abstract terms, which are used to denote complex and abstract notions. Abstraction, or rather exclusive attention to a particular object or quality of an object, is evidently the work of comparison; it is a process quite familiar to the most uncultured minds. Generalisation is dependent on abstraction, and supposes it; but abstraction does not involve generalisation. It is the process through which we obtain general notions and ideas; thus the points in which a number of objects or things agree, having been discovered, we arrange them by these common points of agreement or similarity, into classes; and from the lowest class ascending step by step till we reach at the highest class.[30]

Under the last of the special faculties of cognition—the regulative faculty, which is not, properly speaking, an active faculty—he included those primary notions of intelligence or common sense, variously designated as the fundamental principles of intelligence, laws of thought, necessary cognitions, primary data of consciousness. "There are cognitions in the mind which are not contingent,—which are necessary, which we cannot but think, which thought supposes as its fundamental condition. These cognitions, therefore, are not mere generalisations from experience. But if not derived from experience, they must be native to the mind. . . . These native—these necessary cognitions, are the laws by which the mind is governed in its operations, and which afford the conditions of its capacity of knowledge. These necessary laws, or primary conditions of intelligence, are phenomena of a similar character; and we must, therefore, generalise them or collect them into a class; and on the power possessed by the mind of manifesting these phenomena, we may bestow the name of the Regulative Faculty."

It should be observed that the primary and necessary notions of the mind here announced as the laws which afford the conditions of knowledge, are embodied by Hamilton in his philosophy of the conditioned. He recognised a considerable number of primary or ultimate notions and principles; but did not pretend to give an exhaustive and complete enumeration of such notions. What he

[30] Vol. II., pp. 279-283, 293-295.

really did, was to argue that there was such a class of notions and principles, and actually employed a certain number of them in the construction of his psychology, his philosophy of the conditioned, and his logic.

With regard to the essential characteristics for discriminating the principles of common sense—the original data of consciousness, he says: "These characters, I think, may be reduced to four: (1) Their incomprehensibility, (2) their simplicity, (3) their necessity and absolute universality, (4) their comparative evidence and certainty."[31]

What has just been stated, taken in connection with what was said before, of the immediate facts of consciousness, and the intuitive character of perception, will be sufficient to indicate Hamilton's view of the primary and ultimate notions of the mind. Thus far I have signalised three of the fundamental and distinctive principles of his philosophy. But to complete the exposition of his psychology, it is requisite to notice briefly his treatment of the feelings.

These, the second great class of mental phenomena, in his classification, is not exhaustively treated; but so far it is satisfactory, and exceedingly interesting. He devoted six lectures to the feelings, one of which is occupied with an historical account of the theories of pleasure and pain. His classification and division of the feelings may be indicated thus:

I. First, sensations—the five senses and organic sensations. II. The sentiments and internal feelings: first, the contemplative, subdivided into (1) those of the subsidiary faculties, including those of self-consciousness, and (2) those of imagination, order, symmetry, unity in variety; (3) those of the elaborative faculty, wit, the pleasures of truth and science, and the gratification of adapting means to ends; (4) beauty and sublimity springing from the conjoint energy of the imagination and the understanding. III. The practical feelings relate to (1) self-preservation—hunger and thirst, loathing, sorrow, bodily pain, anxiety, etc.; (2) the enjoyment of our existence; (3) the preservation of the species; (4) the tendency towards development and perfection; and (5) moral law.

He delivered a theory of pleasure and pain, and applied it to explain this general mental phenomena; in other words, he considered the feelings as causes—causes of pleasure and pain; and he then

[31] Hamilton's *Reid*, p. 754.

considered them as effects, or products of the action of our different powers. The scope of his standpoint is thus stated by himself :—

"What are the general conditions which determine the existence of pain; for pleasure and pain are the phenomena which constitute the essential attribute of true feeling, under all its manifestations? . . . I shall, first of all, state the abstract theory of pleasure and pain, in other words, enounce the fundamental law by which these phenomena are governed, in all their manifestations." Under the ninth and last head of his theory, the following is enounced :— "Pleasure is thus the result of certain harmonious relations—of certain agreements; pain, on the contrary, the effect of certain unharmonious relations — of certain disagreements. The pleasurable is, therefore, not inappropriately called the agreeable; the painful, the disagreeable; and in conformity to this doctrine, pleasure and pain, may be thus defined :—Pleasure is a reflex of the spontaneous and unimpeded exertion of a power, of whose energy we are conscious. Pain a reflex of the overstrained or repressed exertion of such a power." As already stated, he illustrates the application of his theory in the explanation of pleasure and pain at some length,[32] with keen insight and rare breadth of view. In the two last lectures, he treats the feelings as effects—as products of the action of our different powers; and thus considered, his exposition is often very happy.

Hamilton's Philosophy of the Conditioned is simply an attempt to systematise the conditions of the thinkable, in the form of an Alphabet of human thought. In its fundamental conception it is restrictive and conservative. Probably he was as well informed and aware of the many aberrations of human thought and speculation as any man that ever lived; and he was fully cognisant of the systems and speculations of those philosophers who had pretended to walk through the dark mountains of eternity and infinity without stumbling, and to return with positive knowledge. Knowing this, he was, therefore, well entitled to make an effort to lay down the conditions and limits of human thought; and thus he has done great service to real philosophy, to science, and mankind.

He grounded his own theory of the Conditioned upon the recognised laws of identity, non-contradiction, excluded middle, and the law of relativity. Thus when he speaks of the Conditioned it is in special reference to relativity; and by existence conditioned is meant

[32] Vol. II., pp. 434-440, *et seq.*

existence thought under relation. Relation may be understood to contain all the categories and forms of positive thought. We should not, however, think it as a law of things, but simply as a law of thought; for we find that there are contradictory opposites, one of which, by the rule of Excluded Middle, must be true, but neither of which can be positively thought, as possible. Thinking, under this condition, is synthetic. The condition of Relativity is brought to bear under three principal relations: the first springs from the subject of knowledge—the mind thinking, the relation of knowledge; the second and third from the object of knowledge—the thing thought about, the relations of Existence.

1. The relations of knowledge are those arising from the reciprocal dependence of the subject and of the object of thought, self and not-self—subjective and objective. Everything that comes into consciousness is thought by us, either as belonging to the mental self exclusively, or as belonging to the not-self exclusively, or as belonging partly to both.

2. The relations of Existence arising from the object of knowledge are twofold; as the relation is either Intrinsic or Extrinsic. As the relation of Existence is Intrinsic, it is that of Substance and Quality. It may be called qualitative. But, as the relation of Existence is Extrinsic, it is threefold; and as formed by three kinds of quantity, it may be called quantitative. It is realised in or by: (1) Protensive quantity, or time; (2) Extensive quantity, Extension or Space; (3) Intensive quantity, or degree.

3. Time, or protensive quantity, called also Duration, is a necessary condition of thought; and it may be considered both in itself and in the things which it contains.

Considered in itself, Time is positively inconceivable, if we attempt to construe it in thought; on the one side, as absolutely commencing or absolutely terminating, or on the other, as infinite or eternal. It is positively conceivable, if conceived as an indefinite past, present, or future; and as an indeterminate mean between the two unthinkable extremes of an absolute least and an infinite divisibility: for thus it is relative.

Things in Time are either coinclusive or coexclusive. Things coinclusive, if of the same time, are identical, apparently and in thought; if of different times, as causes and effect, they appear as different, but are thought as identical. Things coexclusive are mutually either prior and posterior, or contemporaneous.

The impossibility we experience of thinking as non-existent, non-existent, consequently, in time, aught which we have conceived as existent,—this impossibility affords the principle of Causality, which will be subsequently explained.

Time applies to both Substance and Quantity; and includes the other quantities, Space and Degree.

4. Space, extension or extensive quantity, is likewise a necessary condition of thought; and may also be considered, both in itself and in the things which it contains.

Considered in itself, Space is positively inconceivable: as a whole, either infinitely unbounded, or absolutely bounded; as a part, either infinitely divisible, or absolutely indivisible. Space is positively conceivable, as a mean between these extremes; that is, we can think it either as an indefinite whole, or as an indefinite part. For thus it is relative.[33] So much touching the foundation of the philosophy of the Conditioned.

He enounced the Law of the Conditioned thus:—"All positive thought lies between two extremes, neither of which we can conceive as possible, and yet, as mutually contradictory, the one or the other must necessarily be true."[34] We have already seen that we cannot think past time as beginning to be; on the other hand, we cannot conceive it going backwards without limit—eternity baffles our imagination. But time either had a beginning or it had not. So of space, we are unable to conceive space as finite or bounded; we are equally powerless to realise in thought an idea of infinite space. "You may launch out in thought beyond the solar walk, you may traverse in fancy over the universe of matter, and rise from sphere to sphere in the regions of empty space, until imagination sinks exhausted;—with all this what have you done? You have never got beyond the finite, you have attained at best only to the indefinite, and the indefinite, however expanded, is still always the finite. . . . The infinite is infinitely incomprehensible." Thus the conceivable or the thinkable "lies always between two inconceivable extremes, as illustrated by every other relation of thought."[35]

The chief applications of the Law of the Conditioned are to the

[33] *Discussions*, pp. 577-582.

[34] *Discussions*, p. 591; also Reid's *Works*, p. 911. Hamilton states the Law of the Conditioned repeatedly in his different writings; and some of its positions are stated at greatest length in the second volume of his *Lectures*.

[35] *Discussions*, p. 591; *Lectures*, Vol. II., pp. 366-372.

principles of substance and causality: and taking substance first, which he has not treated with much detail. We cannot think a quality existing entirely in or of itself. We are constrained to think it as inhering in some substance; but this substance is only conceived by us the unapparent — the inconceivable correlative of certain appearing qualities. If we attempt to think it positively, we only think it by transforming it into a quality or bundle of qualities, which again we refer to an unknown substance, now supposed for their incognisable basis. Thus, everything may be conceived as the quality, or as the substance of something else; but absolute substance and absolute quality are both inconceivable.[36]

The phenomenon of causality is the Law of the Conditioned applied to a thing thought as existing in time. We cannot know, nor think a thing, except under the attribute of existence, and existing in time; and we cannot know or think a thing to exist in time, and think it absolutely to commence. This imposes on us the judgment of causality. An object is given to us by our perceptive faculties, as given, we cannot but think it existent, and existent in time; but to say this, is to say, that we are unable to think it non-existent,—to annihilate it in thought, and this we cannot do; for once thinking it to exist, we cannot think it not to exist. This will be admitted of the present, but probably denied of the past and future, under the belief that we can think creation or annihilation. Matter or objects may change their forms in innumerable ways; but we cannot conceive that there can be an atom absolutely added to, or taken away from, existence as a whole. Let us try it:—

"We are able to conceive the creation of a world; this indeed as easily as the creation of an atom. But what is our thought of creation? It is not a thought of the mere springing of nothing into something. On the contrary creation is conceived, and is by us conceivable, only as the evolution of existence from possibility into actuality, by the fiat of the Deity. Let us place ourselves in imagination at its very crisis. Now, can we construe it to thought, that the moment after the universe flashed into material reality, into manifest being, that there was a larger complement of existence in the universe and its author together, than the moment before there subsisted in the Deity alone? This we are unable to imagine. And what is true of our concept of creation, holds of our concept of

[36] *Discussions*, p. 580.

annihilation. We can think no real annihilation, no absolute sinking of something into nothing. But, as creation is cogitable by us, only as a putting forth of divine power, so is annihilation by us only conceivable as a withdrawal of that same power. . . . In short, it is impossible for the human mind to think what it thinks existent, lapsing into non-existence, either in time past or in time future."[37]

He thinks that his theory of causality is preferable to others, because to explain the phenomenon of the causal judgment, it postulates no new or express principle, not even a positive power; while it shows that the phenomenon is only one of a class, it assigns as their common cause, only a negative impotence. He also thinks that it affords a philosophical defence of the freedom of the will. He points out the inconsistencies and contradictions of his predecessors; but he admits that speculatively we are unable to understand how moral liberty is possible in man. But practically, our consciousness of the moral law gives a decisive preponderance to the doctrine of freedom over the doctrine of fate. We are free in act, if we are accountable for our actions. That the philosophy of the Conditioned has a real foundation in the human mind, appears to be evident, when considered in its relation to the universe. The necessities of its capacities and faculties of knowledge. their limits and imperfection, as well as the actual position in which man finds himself in the universe of nature, all plainly indicate that his powers of knowledge are anything rather than absolute and infinite. This much may be averred; still, it is open to anyone to question, if Hamilton's applications of his own theory were in all points the most legitimate. I will now proceed to his logic.

He viewed Logic as a formal science, and divided it into pure and modified. In his lectures on this subject, he proceeds on a definite and interesting style of exposition; he first states the leading doctrines in separate paragraphs, and then in a running commentary explains and illustrates them. The first paragraph is this:—"A system of logical instruction consists of two parts—(1) Of an introduction to the science; (2) of a body of doctrine constituting the science itself." These he discussed in their order: the introduction to logic should afford answers to the five following questions: What is logic? what is its value? what are its divisions? what is its history? what are the best books on the subject. These questions

[37] *Discussions*, pp. 591-593; *Lectures*, Vol. II. pp. 400-406.

are treated in a concise and animated style; and the answer to the first one is given in his definition of logic, which is this:—"Logic is the Science of Thought as thought." But he says that this definition cannot be understood without a clear exposition of its several parts, which he proceeds to present.

What he meant by "the laws of thought as thought," is thus explained: the term thought is used in two significations, in a wider, and in a narrower and stricter sense, and it is with thought in the latter sense—thought proper, that logic is concerned. "All thought is a comparison, a recognition of similarity or difference; a conjunction or disjunction, in other words, a synthesis or analysis of its objects. . . . But thought simply is still too undetermined; the proper object of logic is something still more definite; it is not thought in general, but thought considered merely as thought, of which this science takes cognisance. . . . What is meant by thought as thought? It is the recognition of a thing as coming under a concept; in other words, the marking an object by an attribute or attributes previously known as common to sundry objects, and to which we have accordingly given a general name. Logic is properly conversant with the form of thought to the exclusion of the matter.

"But the limitation of the object—matter of logic to the form of thought, is not yet enough to determine its province from that of other mental sciences; for psychology is, in like manner, among other mental phenomena, conversant about the phenomena of formal thought. A still further limitation is, therefore, requisite; and this is given in saying, that logic is the science not merely of thought as thought, but the laws of thought as thought, . . . or the science of the formal laws of thought, or the science of the laws of the form of thought; these being three various expressions of the same thing."[38]

He gives further explanations, of which this is one:—"Abstract logic considers the laws of thought as potentially applicable to the objects of all arts and sciences, but as not actually applicable to those of any; concrete logic considers these laws in their actual and immediate application to the object-matter of this or that particular art or science. The former of these is one, and alone belongs to philosophy, whereas the latter is as multiform as the arts and sciences to which it is relative."[39]

[38] *Lectures*, Vol. III., pp. 3-26. [39] Vol. III., p. 53.

Abstract logic is divided into pure and modified; and the former he divides into two parts: (1) The Doctrine of Elements, which are either laws or products; and (2) Methodology, or the doctrine of Method—the means of thinking well. Modified logic falls into three parts: (1) The first treats of the nature of Truth and Error, and of the higher laws for their discrimination; (2) the second of the Impediments to thinking, with the means of their removal; (3) the third of the Aids of thinking.

In passing, I may remark that Hamilton's treatment of modified logic, although not exhaustive, is exceedingly clear and valuable so far as it goes. This part of his lectures should be attentively read by those who wish to cultivate their minds, or to study the laws of criticism and historical evidence.

The following is his tabular view of the divisions of logic:

- General or Abstract Logic.
  - I. Pure
    - i. Doctrine of Elements.
      - 1. Noetic: Nomology.
      - 2. Dianoetic: Dynamic.
        - *a.* Conception.
        - *b.* Judgment.
        - *c.* Reasoning.
    - ii. Methodology.
      - Clear thinking: 1. Definition.
      - Distinct thinking: 2. Division.
      - Connected thinking: 3. Probation.
  - II. Modified.
    - i. Truth and Error: Certainty and Illusion.
    - ii. Impediments to thinking, with
      - 1. The Mind.
      - 2. The Body.
      - 3. External circumstances.
    - iii. Aids or Subsidiaries to thinking, through
      - 1. The Acquisition of Knowledge.
      - 2. The Communication of Knowledge.

After stating the fundamental laws of thought, he proceeds to the doctrine of Elements—to the exposition of concepts, judgment, and reasoning. Five lectures are given to an explication of concepts or notions: (1) Their general character is described; (2) then their special objective relation, in regard to quantity; (3) their subjective relation, in regard to quality; (4) their imperfection; (5) their reciprocal relation, in regard to the quality of extension—subordina-

tion and co-ordination ; (6) their reciprocal relations in regard to the quantity of comprehension, which are all explained with remarkable clearness.[40]

He expounds his doctrine of judgments in two lectures, and it is in connection with the quantification of the predicate of propositions or judgments that Sir William claims to have made improvements on formal logic.[41] I am aware that his claim, even on this point, has been disputed since his death, but my limits will not permit me to enter into a discussion of the subject; yet I think that the varied materials printed in the second volume of his *Lectures on Logic* afford the means of placing it in its true light. Hamilton there notices many partial anticipations of this doctrine.

As already stated, his projected work on logic was never finished. He introduced, however, several modifications in syllogistic theory, and signalised various distinctions, tending toward more simplicity, and constructed an ingenious scheme of logical notation.[42] There can be no doubt that he spent a considerable part of his life in prosecuting inquiries connected with logic.

[40] Vol. III., p. 137, *et seq.*

[41] In a footnote to his article on Logic, he says :—"It will be seen from the tenor of the text, that, by the year 1833, I had become aware of the error in the doctrine of Aristotle and the logicians, which maintains that the predicate in affirmative propositions could only be formally quantified as particular, nay, that Aristotle, in his practice in the inductive syllogism, virtually contradicts the speculative precept which he, over and over, expressly enounces for syllogism in general. . . . The doctrine of a thorough-going quantification of the predicate, with its results, I have, however, publicly taught since the year 1840, at the latest."—*Discussions*, p. 162.

[42] See *Discussions*, pp. 614-620, and the appendices to the second volume of his *Lectures on Logic*. His final scheme of logical notation is inserted at the end of this volume. I can only notice a few points :—

1. "That we can only rationally deal with what we already understand, determines the simple logical postulate—to state explicitly what is thought implicitly.

2. "All mediate inference is one—that incorrectly called Categorical; for the Conjunctive and Disjunctive forms of hypothetical reasoning are reducible to immediate inferences.

"Mentally one, the Categorical Syllogism, according to its order of enouncement, is either Analytic (A) or Synthetic (B). Analytic, if what is inappropriately styled the conclusion be expressed first, and what are inappropriately styled the premisses be then stated as its reasons. Synthetic, if the premisses precede, and, as it were, effectuate the conclusion. These general forms of syllogism can with ease be distinguished by a competent notation ; and every special variety in the one has its corresponding variety in the other.

He also wrote very effectively on Education, chiefly on the higher branches, and in reference to University reform. His views were comprehensive, enlightened, and liberal, far in advance of his time. But occasionally he was extremely outspoken and severe on the prevailing abuses and shortcomings of the Universities. He did not limit himself to Scotland, but wrote powerfully on the state of the English Universities, with especial reference to Oxford. He argued that dissenters ought to be admitted into the public Universities. Altogether, his articles on education contain a body of varied, curious, interesting, and valuable information.

To sum up, I have presented a brief account of Hamilton's psychology and philosophy; its fundamental principles have been explained. He taught the doctrine that man, in so far as he is a mean for the glory of God, must be an end to himself, inasmuch as his perfection and happiness constitute the goal of his activity. He seemed to value the pursuit of truth more than its possession, or rather that its pursuit afforded man more pleasure than its possession, which is quite true. He embraced the doctrine of intuitive perception—natural realism; and drew up a scheme of all the possible theories of perception. He maintained that the human mind possesses native notions, necessary cognitions, which afford the requisite conditions of knowledge. His own vast and varied knowledge of recorded thought and philosophical systems afforded him innumerable instances of the aberrations of thought, contradictions, and vain presumptions; and so he constructed his Philosophy of the Conditioned, which indicates the limits of human thought.

"Taking the syllogism under the latter form (B), which, though perhaps less natural, has been alone cultivated by logicians, and to which therefore, exclusively all logical nomenclature is relative,—the syllogism is again divided into the non-figured (*a*) and figured (*b*)."—*Discussions*, pp. 614-616.

3. "Quantity and quality combined constitute the only real discrimination of syllogistic mood. Syllogistic figure vanishes, with its perplexing apparatus of special rules; and even the general laws of syllogism proper are reduced to a single compendious canon. . . .

"We have shown that a judgment or proposition is only a comparison resulting in a congruence, an equation, or non-equation of two notions in the quantity of extension; and that these compared notions stand to each other, as the one subject and the other predicate, as both the subject, or as both the predicate of the judgment. If this be true, the transposition of the terms of a proposition sinks into a very easy and a very simple process; whilst the whole doctrine of logical conversion is superseded as operose and imperfect, as useless and erroneous."—*Lectures*, Vol. IV., App., pp. 275-276.

He took a strictly formal and limited view of the province of logic; and upon this conception his exposition of the science is clear and masterly. He also endeavoured to simplify the common syllogistic system, and introduced several useful improvements.

His conception of method, his skill and care in arrangement, and in brief and clear summaries, are admirable; while his powers of exposition were of the highest order. The style of his lectures is lighted with a fire and glow of thought and a genuine human feeling rarely found in philosophical literature.

Hamilton attained a European reputation in his own lifetime, chiefly through his articles in the *Edinburgh Review*, and his teaching in the University of Edinburgh. Since his death his writings have had a considerable influence. He had of course a certain number of direct followers, very few of whom are now alive. But several other schools of thought are indebted to Hamilton; and perhaps Herbert Spencer is more indebted to him for the fundamental conceptions and principles of his system of philosophy than to any other philosopher. This of course, mainly refers to Spencer's *First Principles*, but partly also to his *Psychology*. On the other hand, Hamilton's philosophy has been subjected to severe criticism from various quarters.[43] I can, however, only mention the fact, and must refrain from entering into any discussion.

[43] J. S. Mill's *Examination of Hamilton's Philosophy* is well known, and it is an able and acute work; but I affirm that Mill did not, in all respects, present a fair and just estimate of Hamilton. He did not take any account of the circumstances in which Hamilton was placed; and so when reckoning up the little that Hamilton had produced in philosophy in comparison to what he might have done, and began to seek for reasons to explain this, it never occurred to him to assign any weight to these circumstances. Unfortunately Hamilton's father died when he was an infant; Mill's father not only lived to bring him up, but also to educate him personally, and to cram him with all kinds of knowledge and science, so that long ere he reached the years of manhood, he was a prodigy; then, when he came of age, his father got him into a position in the Indian Office, where he had only to work a few hours a day. Thus his father did everything for him that could be done. Mill never knew the difficulties of finding a post for himself, or the humiliation of going about seeking employment. Hamilton had to face a very different career, as he had to struggle hard for existence, and fight many a battle ere he attained a position.

But Mill himself avows that he wrote his *Examination of Hamilton's Philosophy* for the express purpose of reducing his too great reputation, and explicitly declares in his own *Autobiography* that it had fully effected its original aim!

Dr. J. F. Ferrier was an intimate friend of Sir William Hamilton, and at one time he was professor of civil history in the University of Edinburgh; but in 1846 he was appointed to the chair of moral philosophy in the University of St. Andrews, which he held until his death in 1864. When the chair of logic and metaphysics in the University of Edinburgh became vacant on the death of Hamilton, Ferrier entered the field as a candidate for it, but he was not successful. However, in connection with this he published a pamphlet in 1856, entitled *Scottish Philosophy, the Old and the New*, the new being his own. In this pamphlet he complained against the town council of Edinburgh for allowing themselves to be influenced by certain outside parties in favour of candidates who professed to teach the old Scottish philosophy in preference to the new. It seems that he was greatly disappointed when he failed to obtain the Edinburgh chair.[44]

Ferrier's *Institutes of Metaphysics, the Theory of Knowing and Being*, appeared in 1854. It consists of an introduction, partly historical and partly critical, and three sections, the first of which treats of the theory of knowledge, the second of the theory of ignorance, and the third of the theory of being. He adopted the demonstrative method of exposition, states his propositions and counter propositions in a series, and reasons them out in a precise and rigorous form. His thinking is acute, definite, vigorous, and easily followed. In short, his style is unusually clear, simple, and concise.

Ferrier's first proposition is headed, "The primary law or condition of knowledge," and it is worded thus:—"Along with whatever any intelligence knows it must, as the ground or condition of its knowledge, have some cognisance of itself." This is a very primitive truth, and he tells us over and over that it is the keystone of his system. "Looked at in itself, or as an isolated truth, our first proposition is of no importance; but viewed as the foundation of the whole system, and as the single staple on which all the truths subsequently to be advanced depend, it cannot be too strongly insisted

[44] In this pamphlet he replied to criticisms on his own metaphysics, and says:—"It has been asserted that my philosophy is of German origin and complexion. A broader fabrication than that never dropped from human lips or dribbled from the point of pen. My philosophy is Scottish to the very core; it is national in every fibre and articulation of its frame. It is a natural growth of old Scotland's soil, and has drunk in no nourishment from any other land," (p. 12).

on or too fully elucidated. Everything hinges on the stability which can be given to this proposition, on the acceptance it may meet with. If it falls, the system entirely fails; if it stands, the system entirely succeeds. It is to be hoped that the reader will not be stopped or discouraged by the apparent truism which it involves. He may think that if the main truth which this philosophy has to tell him is that all his cognitions and perceptions are known by him to be his own, he will have very little to thank it for. Let him go on and see what follows."

He remarks that if this first proposition is not very clearly confirmed by experience, it is not refuted by experience; for by no effort can anyone ever apprehend a thing to the entire exclusion of himself. A man cannot leave himself altogether out of his account and proceed to the consideration of the surrounding objects. But experience can only establish it as a limited matter of fact, and this is insufficient for the purposes of his subsequent demonstrations. "It is reason alone that can give to this proposition the certainty and extension which are required to render it a sure foundation for all that is to follow. . . . It must be established as a necessary truth of reason—as a law binding on intelligence universally—as a conception the opposite of which is a contradiction and an absurdity.

"Strictly speaking, the proposition cannot be demonstrated, because, being itself the absolute starting-point, it cannot be deduced from any antecedent data; but it may be explained in such a way as to leave no doubt as to its axiomatic character. It claims all the stringency of a geometrical axiom, and its claims, it is conceived, are irresistible. . . . A man has knowledge, and is cognisant of perceptions only when he brings them home to himself. If he were not aware that they were his, he could not be aware of them at all. Can I know without knowing that it is I who know? No, truly. But if a man in knowing anything, must always know that he knows it, he must always be self-conscious."

But this had been fully recognised before by the Scottish School. For there is nothing more explicit in Hamilton, than that consciousness is the primary, the necessary, and the universal condition of knowing, and of knowledge. It would be unfair, however, to adduce this as detracting in any way from the candour and the merit of Ferrier's work; and I shall quote a part of what he says regarding anticipations of his own first proposition:—

"But passing over all intermediate approximations, we find antici-

pations of this first principle in the writings of the philosophers of Germany. It has no claim to novelty, however novel may be the uses to which these institutes apply it. Kant had glimpses of the truth; but his remarks are confused in the extreme, in regard to what he calls the analytic and synthetic of consciousness. This is one of the few places in his works from which no meaning can be extracted. In his hands the principle answered no purpose at all. It died in the act of being born, and was buried under a mass of subordinate considerations before it can be said to have even breathed. Fichte got hold of it, and lost it; got hold of it, and lost it again, through a series of eight or ten different publications, in which the truth slips through his fingers when it seems just on the point of being turned to some account. Schelling promised magnificent operations in the heyday of his youth, on a basis very similar to that laid down in this first proposition. But the world has been waiting for the fulfilment of these promises—for the fruits of that exuberant blossom—during a period of more than fifty years. . . . Hegel —but who has ever yet uttered one intelligible word about Hegel? Not any of his countrymen, not any foreigner—seldom even himself. With peaks, here and there, more lucent than the sun, his intervals are filled with a sea of darkness, unnavigable by the aid of any compass, and an atmosphere or rather vacuum, in which no human intellect can breathe. Hegel had better not be meddled with just at present. It is impossible to say to what extent this proposition coincides, or does not coincide, with his opinions; for whatever truth there may be in Hegel, it is certain that his meaning cannot be wrung from him by any amount of mere reading, any more than the whisky which is in bread—so at least we have been informed—can be extracted by squeezing the loaf into a tumbler. He requires to be distilled, as all philosophers do, more or less, but Hegel to an extent which is unparalleled."[45]

[45] Pp. 82-84, 90-92. Since the above passage was written, a considerable change has occurred in Scotland with regard to Hegel. Dr. Stirling's efforts to explain Hegel are well known; and Dr. Seth, now Professor of Logic and Metaphysics in the University of Edinburgh, after criticising the principle of the Relativity of Knowledge, and generally commenting unfavourably on Hamilton's principles, speaks of Hegel thus :—

"So far as I can see, Hegel alone of all metaphysicians lifts us completely clear of Relativism. He alone has gone systematically to work to lay bare the abstractions on which it depends; and in so doing he has to a great extent transformed the character of metaphysics, and so rendered unjust many of the epithets which popular phraseology still associates with the science.

His theory of Ignorance seems the most effective section of his *Institutes*. Its principle is that ignorance is a defect, privation, or shortcoming; and that there can be an ignorance only of that which can be known. But Ferrier's *Institutes*, and also several dissertations published after his death, are almost entirely occupied in clearing the ground of prevailing contradictions and inconsistencies of thought. His own positive views consist of a few remarks and brief indications.

George Croom Robertson was born in Aberdeen on the 10th of March, 1842. He was educated at the Grammar School there, and at the University of Aberdeen, where, after a very distinguished career, he graduated in 1861 with highest honours in classics and mental philosophy. The same year he gained the Ferguson Scholarship, in these two subjects, one of the great prizes open to all Scottish graduates. Subsequent to this Mr. Robertson pursued his philosophic studies for upwards of two years at Heidelberg, Berlin, Göttingen, and Paris, where he made the acquaintance of Trendeleburg, Du Bois, Reymond, Bona Meyer, Lotze, and other distinguished teachers and thinkers, and profited greatly by their instruction and intercourse. He returned to Aberdeen in 1863, and continued to devote his attention to philosophical study.

Having elaborated a number of valuable and interesting notes from his German studies, he assisted Dr. Bain in the revision and amplification of his work, entitled, *The Senses and the Intellect, the Emotions and the Will*, for a second edition. He also aided Dr. Bain in the ethical part of the excellent manual—*Mental and Moral Science*,. and

"We have Hegel's own word for it that the method is nothing, unless we bring the whole nature of thought with us. . . . The Method sums up a thought which may almost be said to constitute Hegel's philosophy, and one which, in my opinion, gives him a signal advantage over all his modern predecessors.

"The thought in question is primarily a logical principle; a fact which may partly explain why Hegel made his logic the centre of his system. It is the principle to which we have already referred so often, the systematic recognition of the fact that thought is founded upon difference; whereas identity had hitherto been the god of the logician's idolatry. . . . I do believe that here we have a principle, not of arbitrary invention, but drawn from the heart of things, from the nature of the self-conscious spirit itself. . . . The essential point in a systematic philosophy is simply the possession of some outline or scheme, by reference to which each conception may be judged and receive its place and meaning. In self-consciousness, Hegel seems to hold a position, from which, in the nature of the case, it is impossible to dislodge him."—Seth's *Lectures on Scottish Philosophy*, pp. 167, 171, 174, 83, 195—197.

contributed to it the articles on the Neo-Platonists, the Scholastic Ethics, Hobbes, Cumberland, Cudworth, Kant, Cousin, and Jouffroy. In these there is ample evidence of Robertson's philosophic, critical, and literary powers, scholarship, and research.

In 1864 he was appointed assistant to Professor Geddes in the University of Aberdeen, and held the post for two sessions; he also assisted in teaching the Greek classes. In December, 1866, he was appointed to the Chair of Mental Philosophy and Logic in University College, London, and opened his class in January, 1867. He carefully prepared courses of lectures for his classes on Systematic Psychology, Ethical Theory, and Logic—inductive and deductive. He mainly directed his teaching to the elaboration and explication of psychological doctrines, and the history of philosophy. His knowledge of recorded thought, and of the great philosophical systems, ancient and modern, was wide and accurate, while his clear style of stating psychological doctrines and expository powers were remarkable.

For ten years he was Examiner in Philosophy in the University of London. He also acted as Examiner in the University of Aberdeen for two terms. Occasionally he delivered popular lectures at Manchester, Newcastle, and the Royal Institution, London. For several years he gave the philosophical course of lectures to the College of Preceptors. He took an active interest in the business and management of University College, as a member of the Senate, and subsequently as one of the Senate's Representatives on the Council.

In 1874 Dr. Bain originated a proposal for establishing a Quarterly Journal of Philosophy, and consulted Robertson on the subject. Dr. Bain desired that Professor Robertson should be editor, and after consideration he accepted the editorship. Time, however, was required to obtain the approbation and promise of support from, at least, some of the eminent living writers on philosophy. Accordingly both made efforts by personal interviews and correspondence, and they received sufficient encouragement to make arrangements for the publication. Under the title of *Mind: a Quarterly Journal of Psychology and Philosophy*, the first number appeared in January, 1876. Robertson was editor of *Mind* for sixteen years, and expended a great amount of thought and labour upon it. Besides his own original articles, and many reviews of works on psychology, ethics, and philosophy, he carefully revised most of the articles contributed by others before they appeared in the pages of *Mind*. This quarterly

publication—the first entirely devoted in the English language to the discussions of mental philosophy, has, during the last twenty years, had a considerable influence upon philosophic thought.

Professor Robertson's health began to fail twelve years before his death. During the sessions from 1883 to 1888 he had several times to employ substitutes for his teaching work in the College. In the later years of his life he suffered much severe pain, which he bore with great patience. He resigned his Chair in the College on the 7th of May, 1892. His wife died on the 29th of May, the same year; and he himself died on the 20th of September following.[46]

Owing to weak health in the later part of his life, and his death at the comparatively early age of fifty, his writings are not voluminous. Yet they touch on a considerable variety of subjects of much interest, embracing biography, psychology, and philosophy treated historically and associated with the characteristics of an elevated and candid criticism.

He contributed to the *Dictionary of National Biography* biographies of George Grote, the historian, and his wife, and two of the historian's brothers—John and Arthur. His contributions to the ninth edition of the *Encyclopædia Britannica* extended to eight articles, two of which were historical. One of these dealt with Abelard, the famous lecturer and teacher of the twelfth century, a very able and interesting article. Another article was on the remarkable philosopher, Hobbes, a subject to which he had given much attention, and subsequently treated in a book. The remaining articles were philosophical, and treated on Analogy, Analysis, Analytic Judgments, Autonomy, Association, and Axion. All these are admirable specimens of method, clear thought, polished style, and lucid exposition of difficult mental processes.

At an early stage of his life he intended to write a large work on Hobbes, and to treat the subject on comprehensive historic lines. He rightly formed the conception that Hobbes was an important historic character, as he lived and wrote in one of the stirring and revolutionary periods of the history of the Island. He had made some progress in research and had prepared much material for such a work, but untoward circumstances of health prevented him from realising his original conception. He, however, as mentioned before, contributed

[46] *Philosophical Remains of George Croom Robertson, with a Memoir*, 1894. This volume was edited by Dr. Bain and Mr. T. Whittaker, who had long acted as Robertson's assistant in preparing notices for *Mind*.

an article on Hobbes to the *Encyclopædia*; and in 1886 a volume on Hobbes appeared as one of the series, entitled *Philosophical Classics for English Readers*. It is not written on a large scale, yet it is a compact and excellent treatise. He shows a fine historic insight into the social and political conflicts of the period, with reference to their influence upon Hobbes's views and opinions. Robertson's remarkable historic faculty is clearly manifested in this volume. His appreciation and criticism of Hobbes' works, and his influence on subsequent writers, is marked by thoroughness, candour, and accuracy. The treatise is a model of its kind, and is recognised as the best existing monograph on the subject.

To conclude, the preceding account of Scottish Philosophy covers nearly two centuries. The Scottish Philosophers mainly concentrated their efforts on mental philosophy—the explication of the human mind, psychology, moral and political science. Their works present a body of doctrines and reflective thought which are well worth careful study. For the mind alone constitutes the distinctive glory and dignity of man. Insomuch, that it is only by the culture of the mind and the moral sentiments that mankind can hope to attain a more elevated and higher stage of civilisation.

CHAPTER XL.

Literature of Scotland in the Eighteenth and Nineteenth Centuries.

Section I.

Historical Literature of the Eighteenth Century.

AFTER the union various external influences began to touch Scottish literature. Ere indicating these, and dealing with the eminent historians of the period, a few of the historical writers who preceded them may be briefly noticed.

Dr. Patrick Abercromby was descended from the Abercrombies of Tullibody in Fife, and was born at Forfar in 1656. He was educated at the University of St. Andrews, and obtained the degree of doctor of medicine in 1685. His family were supporters of the Stuart line, and he was appointed one of the physicians of James VII. After the Revolution of 1688 he lived abroad, but returned to Scotland in the reign of Queen Anne, and directed his attention to the study of national antiquities. The first volume of his work, entitled *The Martial Achievements of the Scots Nation*, was published in 1711, and the second in 1715. This work is interesting, but it has little historical value.

James Anderson, a son of the Rev. Patrick Anderson, was born in 1662. He was educated at the University of Edinburgh, and graduated in 1680; and having subsequently studied Law, in 1691 he became a member of the Society of Writers to the Signet.

When the question of the Union was stirring the feeling of the Scottish people, Mr. Attwood, a lawyer, in 1704 issued a pamphlet, in which all the old claims of Edward I. over Scotland were reasserted. In 1705 Mr. Anderson published an answer to Attwood's pamphlet, entitled *An Essay, showing that the Crown of Scotland is Imperial and Independent.* This effort was well received in Scotland, while Parliament passed a vote of thanks and a reward to Mr. Anderson, which was presented to him by the Chancellor in presence of the

Royal Commissioner. Then Attwood's pamphlet and others of a similar character were ordered to be burned at the Cross of Edinburgh by the common hangman. The value of Anderson's essay mainly consisted in the important charters attached to it.

In research connected with his essay, he had collected a number of valuable national documents. He obtained the patronage of the Scottish Parliament to a plan for engraving and publishing a series of facsimiles of royal charters prior to the reign of James I., and of coins and seals from the earliest times to the end of the seventeenth century. In November, 1706, the Scottish Parliament granted him three hundred pounds to promote the work, and he proceeded with it. By the beginning of March, 1707, he had expended this sum and about six hundred pounds of his own on the work. This was reported to Parliament, and a majority of the House recommended that the Queen should grant to him an additional sum of one thousand and fifty pounds. It said, however, that the money voted to Anderson by the expiring Parliament was never paid to him, yet he proceeded with the work. In 1728 he died, leaving his great undertaking unfinished. The year after his death the plates of the work were sold for £530. At last his work, under the title of *Selectus Diplomatum et Numismatum Scotiæ Thesaurus*, appeared, carefully edited by the well-known scholar, Thomas Ruddiman, who contributed an elaborate preface. At that time the work had much historical value as a book of reference. Anderson was also the author of *Collections relating to the History of Mary, Queen of Scotland*, published at Edinburgh in 1727-8 in four volumes, which contains a great number of original documents touching the Marian controversy.

Dr. John Campbell,[1] a son of Campbell of Glenlyon, attained some distinction as an historical writer. His *Military History of the Duke of Marlborough and Prince Eugene* was published in 1736 in two volumes, and was well received. In 1742-44 his *Lives of the Admirals* appeared in four volumes, which, owing to the interest of the subject, was long popular. His work, *The Present State of Europe*, was issued in 1750, and passed through many editions. He wrote a portion of the *Biographia Britannica*, and contributed a number of articles to the *Modern Universal History*. His last work was a *Political Survey of Britain*, published in 1774 in two volumes, which was much admired. He was a candid and well informed man, and an industrious writer.

[1] Born at Edinburgh in 1707 ; died in 1775.

Walter Goodal[2] was a native of Banffshire, and was educated at King's College, Aberdeen. In 1730 he obtained employment in the Advocates' Library at Edinburgh, and assisted Ruddiman in the compilation of the first Catalogue of the Library, which was printed in 1742. When Hume succeeded Ruddiman, Goodal continued to act as sub-librarian. He was an ardent Jacobite, and an enthusiastic defender of Mary, Queen of Scots. He contemplated writing a life of Mary, but ultimately limited his effort to *An Examination of the Letters said to be written by Queen Mary to James, Earl of Bothwell*, which appeared in 1754. It is an important work. His conclusion is that the famous "Casket Letters" were not written by Queen Mary. The subsequent defenders of the unfortunate Queen, including Skelton, usually refer with confidence to Goodal's conclusion on the Letters as decisive.

He published an edition of *Scott of Scotestarvet's Staggering State of Scots Statesmen, with Notes;* an edition of *Fordun's Scotichronicon, with a Latin Introduction;* and also contributed to *Keith's Catalogue of Scottish Bishops.*

Thomas Innes was a native of the Valley of the Dee, Aberdeenshire. He left Scotland when young, completed his education abroad, and became a Roman Catholic priest. He is the author of *A Critical Essay on the Ancient Inhabitants of Scotland*, published in 1729. The preface extends to fifty pages, and the Essay itself is elaborate, and shows evidence of much research. His effort has the merit of being the first that questioned the legendary history of Ireland and Scotland. The value of his work, however, was not recognised till after his death.

Early in the eighteenth century indications of a literary revival appeared in Scotland. The awakening influences were mainly native, though external circumstances partly aided it. The energy and genius of the Scots under favourable conditions, soon manifested itself in literature as in other fields of enterprise. The external influence which aided the literary revival came from English literature, at a somewhat later stage and in a slighter degree from French literature. The culture of style became a special object of study, and attempts were made to acquire the idiomatic expression of classic English writers.[3]

[2] Born in 1706; died on the 28th July, 1766.

[3] One stimulus of the literary revival was the Clubs and Societies which were specially formed for literary conversation and improvement in composition. To promote these objects, in 1716 the Rakenian Club was instituted in Edinburgh, and it continued to meet till 1760. In the roll of its members the names of a number of Scottish literary men appeared, including Maclurin, the mathema-

In the department of history an important change appeared in the eighteenth century. The critical examination of historical evidence began to be recognised and applied, and a clearer conception of the requisites of historical inquiry was shown. Yet it cannot be affirmed that adequate historic conceptions of the human race were attained by the historians of the period.

David Hume avowed that he was actuated by a passionate love of literary fame, which led him to turn aside from philosophical studies and try his skill in historical composition. In 1747 he formed a resolution to write some historical work. As he had also a desire to counteract the prejudice against the Stuart Kings, he resolved to commence his *History of Great Britain* with the reign of James VI. With the view of facilitating his historic studies, in 1752 he assumed gratuitously the office of Librarian to the Faculty of Advocates in Edinburgh; and in the Advocates' Library, amid a rich store of books and historical materials, he began to write his history. The first volume, embracing the reigns of James VI. and Charles I., appeared in 1754, the second in 1757, the third and fourth in 1759, and the fifth and sixth in 1762. The first volume was bitterly assailed by the Whigs, and Hume was greatly disappointed by the attacks upon his work, and also on account of its slow sale. In a short time, however, his history became popular, new editions were issued in rapid succession; and at last Hume was placed in the front rank of English historians.

tician; Rev. Dr. Robert Wallace; Dr. Young, a distinguished physician; Rev. George Turnbull, author of a work on moral philosophy, and a treatise on Ancient Painting; Alexander Boswell, a Lord of Session, and father of Johnson's biographer. This Club was pretty successful in disseminating freedom of thought, taste, and attention to composition. At a somewhat later time societies with similar or wider aims were formed in other cities in Scotland. In 1750 the Select Society projected by Allan Ramsay, the painter, was instituted in Edinburgh, for the purposes of literary discussion, philosophical inquiry, and improvement in public speaking. It continued active for seven years, and amongst its members were — Hume, Dr. Robertson, Adam Smith, Adam Ferguson, Lord Kames, Lord Hales, Lord Monboddo, John Home, and other celebrated men. Dugald Stewart says the Society produced—"Debates such as have not often been heard in modern assemblies—debates where the dignity of the speakers was not lowered by the intrigues of policy, or the intemperance of faction, and where the most splendid talents that have ever adorned this country were roused to their best exertions by the liberal and ennobling discussions of literature and philosophy."—*Life and Writings of Dr. Robertson*, p. 15.

Recognising his great abilities, easy circumstances, and the varied store of historical matter at his command, yet it has to be regretted that his work is not of high historical authority. He did not reach a high standard either in research or the accurate statement of facts; though he was well qualified to estimate every description of evidence, still he fell into many mistakes. On some important religious and political subjects, such as the Covenanting struggle, and the period of persecution in Scotland, Hume was constitutionally disqualified for forming just views of his suffering countrymen. Having made these adverse comments on his history, I will indicate some of its special merits. Looking at the general character of his work, in many points it is much superior to the annals and compilations of previous British historians. His sagacity enabled him to sink much of the offal and draff which encumber the pages of less gifted writers. While he exhibited a lamentable deficiency in appreciating some of the movements of the seventeenth century, yet on other occasions the views of conflicting parties are grasped and estimated with rare fairness, and presented with much effect. He recognises the importance of literature and culture, which is specially treated in certain portions of his history. His narrative is admirable. His style is clear, easy, and polished.

The following on the character of Queen Elizabeth is a fair specimen of his style:—"There are few personages in history who have been more exposed to the calumny of enemies and the adulation of friends than Queen Elizabeth; and yet there is scarcely any whose reputation has been more certainly determined by the unanimous consent of posterity. The unusual length of her administration, and the strong features of her character, were able to overcome all prejudices; and obliging her detractors to abate much of their invectives, and her admirers somewhat of their panegyrics, have at last, in spite of political factions, and what is more, of religious animosities, produced a uniform judgment with regard to her conduct. Her vigour, her constancy, her magnanimity, her penetration, vigilance, and address, are allowed to merit the highest praise, and appear not to have been surpassed by any person that ever filled a throne: a conduct less vigorous, less imperious, more sincere, more indulgent to her people, would have been requisite to form a perfect character. By the force of her mind she controlled all her more active and stronger qualities, and prevented her from running into excess: her heroism was exempt from temerity, her frugality from avarice, her friendship from partiality, her active temper from turbulency and

vain ambition : she guarded not herself with equal care or success from lesser infirmities ; the rivalship of beauty, the desire of admiration, the jealousy of love, and the sallies of anger."

Dr. William Robertson[4] was a native of the parish of Borthwick, in the county of Edinburgh, where his father was minister. He was educated for the Church, and in 1743, was appointed minister of Gladsmuir in Haddingtonshire ; but in 1758, he removed to one of the churches of Edinburgh. He delivered his first speech in the General Assembly in 1751, which at once produced a marked impression, and was subsequently the leader of the moderate party in the Church of Scotland.

His works consist of : (1) *The History of Scotland during the Reigns of Queen Mary and James the VI.*, which appeared in 1759 ; (2) *History of the Reign of Charles V.*, in three volumes, published in 1769 ; (3) *History of America*, (1777) ; and (4) *A Historical Disquisition on Ancient India*, a slight sketch, (1791). For the copyright of his *History of Scotland*, he received £600, and £4500 for his *History of Charles V.*

Shortly after the publication of his *History of Scotland*, he was appointed principal of the University of Edinburgh, and historiographer royal for Scotland.

Dr. Robertson was a man of great intellectual power and grasp of mind, combined with a singularly clear and sober judgment. Guided and enlightened as his faculties were by a pretty broad and varied culture, the works which he produced were all stamped with enduring qualities, and still remain monuments of his industry and genius. Although his works are not remarkable for exhaustiveness of research, he possessed in a high degree the rarer qualification of seizing the essential features of a subject, and presenting them in a lucid and attractive way. His introductory chapter on Scottish history prior to the birth of Queen Mary, though only a slight retrospective sketch, is remarkable for its grasp and luminous view of the subject. It is true that this period of history is now better understood than it was in his day ; yet with the materials within his reach, he drew a wonderfully accurate picture of the subject.

His *History of Scotland* is intensely interesting ; the period itself was a stirring one, full of important, varied, and tragic events ; his

[4] Born in 1721 ; died 1793. An interesting account of his life and writings was written by Dugald Stewart.

narrative is masterly, and his style flowing and clear. The first volume of his *History of Charles V.*, which describes the state of society in Europe prior to the sixteenth century, is one of the most valuable parts of his works, and exhibits his highest qualifications as a historian to the best advantage. Soon after its appearance the work was translated into French. His *History of America* is full of deep interest, presenting a clear narrative teeming with picturesque features and touching incidents, accompanied with striking and philosophical reflections, which charmed the literary world. A short extract from his account of the discovery of America may be given. The land had been descried about midnight, and great joy was manifested by the crews of the ships:—

"As soon as the sun arose, all their boats were manned and armed. They rowed towards the island with their colours displayed, with warlike music, and other martial pomp. As they approached the coast, they saw it covered with a multitude of people, whom the novelty of the spectacle had drawn together, whose attitudes and gestures expressed wonder and astonishment at the strange objects which presented themselves to their view. Columbus was the first European who set foot on the new world which he had discovered. He landed in a rich dress, and with a naked sword in his hand. His men followed, and kneeling down, they all kissed the ground which they had so long desired to see. They next erected a crucifix, and prostrating themselves before it, returned thanks to God for conducting their voyage to such a happy issue. They then took solemn possession of the country for the crown of Castile and Leon, with all the formalities which the Portuguese were accustomed to observe in acts of this kind in their new discoveries.

"The Spaniards, while thus employed, were surrounded by many of the natives, who gazed in silent admiration upon actions which they could not comprehend, and of which they did not foresee the consequences. The dress of the Spaniards, the whiteness of their skins, their beards, their arms, appeared strange and surprising. The vast machines in which they had traversed the ocean, that seemed to move upon the waters with wings, and uttered a dreadful sound resembling thunder, accompanied with lightning and smoke, struck them with such terror that they began to respect their new guests as a superior order of beings, and concluded that they were children of the sun, who had descended to visit the earth.

"The Europeans were hardly less amazed at the scene now before them. Every herb and shrub and tree was different from those which flourished in Europe. The soil seemed to be rich, but bore few marks of cultivation. The climate, even to the Spaniards, felt warm, though extremely delightful. The inhabitants appeared in the simple innocence of nature, entirely naked. Their black hair, long and uncurled, floated upon their shoulders, or was bound in tresses on their heads. They had no beards, and every part of their bodies was perfectly smooth. Their complexion was of a dusky copper colour, their features singular rather than disagreeable, their aspect gentle and timid. Though not tall, they were well-shaped and active. Their faces and several parts of their bodies were fantastically painted with glaring colours. . . . Towards evening Columbus returned to his ships, accompanied by many of the islanders in their boats, which they called canoes; and though rudely formed out of the trunk of a single tree, they rowed them with surprising dexterity. Thus, in the first interview between the inhabitants of the old and new worlds, everything was conducted amicably and to their mutual satisfaction. The former, enlightened and ambitious, formed already vast ideas with respect to the advantages which they might derive from the regions that began to open to their view. The latter, simple and undiscerning, had no foresight of the calamities and desolation which were approaching their country."

William Guthrie, a son of an episcopal minister, was born at Brechin in 1708. He was educated at King's College, Aberdeen, and afterwards proceeded to London to push his fortune. He was for some time engaged writing as a supporter of the Government, and received from the Pelham Ministry a pension of £200 per annum. He became a voluminous writer, and was connected with many literary undertakings. He wrote a History of England in three volumes, which begins with the Conquest and closes with the Commonwealth. In 1767 he published a History of Scotland in ten volumes. His *Historical and Geographical Grammar* was his most successful work. It had reached its twenty-first edition in 1810, and was translated into French. He died on the 9th of March, 1770.

Dr. Smollet, the novelist, wrote a *History of England*, published in 1758, in four large volumes; but it is not of much historical value. It was hastily composed without sufficient preparation and study, and it is full of mistakes and inconsistencies. The portion of this history

from 1688 to the death of George II. has often been printed as a continuation to Hume's history.

Mr. William Tytler of Woodhouselee, published in 1759 *An Inquiry into the Evidence against Mary Queen of Scots*, in which he combated the views advanced by Robertson and Hume, touching Queen Mary. Tytler's work is acute and candid, but not at all conclusive. He also rendered good service to the national literature by his publication of the Poetical Remains of James I., with a dissertation on the life and writings of the royal poet.

Dr. Gilbert Stuart was born at Edinburgh in 1742. He is the author of a *History of Scotland*, a *History of the Reformation*, and a *Dissertation on the British Constitution*. He also wrote many articles for periodicals in which he bitterly attacked the works of some of his contemporaries. His style is florid and flowing, but much affected. He died in 1786.

In 1771, the first volume of Dr. Robert Henry's[5] *History of Great Britain* appeared, and four others followed at intervals from this date to 1785. In this work special attention was directed to the state of the people and domestic manners; but it only came down to the reign of Henry VIII. The author received for his work £3300; and was rewarded with a pension from the Crown of £100 a year.

Lord Hailes, a son of Sir James Dalrymple, was born in Edinburgh in 1726. He distinguished himself at the Scottish bar, and was raised to the bench in 1766. He was a man of considerable erudition, an able lawyer and conscientious judge. He was, moreover, a man of wit, and had a strong feeling of the comic and ridiculous in human conduct and character, "which gave a keen edge of irony both to his conversation and writings. . . . How much he excelled in painting the lighter weaknesses and absurdities of mankind, may be seen from the papers of his composition in the *World and the Mirror*. . . . In a word, he was an honour to the station which he filled, and to the age in which he lived. He died in his 67th year, on the 29th of November 1792."[6]

The first part of Lord Hailes' *Annals of Scotland* was published in 1776, and the second part, which brought the work down to the death of David II., appeared in 1779. It is a work of very high merit and historical value, and it has been long well known and

[5] Born in 1718; died in 1790.

[6] *Memoirs of the Life and Writings of Lord Kames*, by A. F. Tytler, Vol. I., pp. 182-183; 1807.

esteemed by historical students. He was gifted with the critical faculty in a high degree, and the power of discriminating and estimating historical evidence. Lord Hailes was also the author of a number of legal and antiquarian treatises; of the *Remains of Christian Antiquity*, containing translations from the Fathers, etc., and of *An Inquiry into the secondary causes assigned by Gibbon for the rapid spread of Christianity.*

Dr. Adam Ferguson's *Essay on the History of Civil Society* appeared in 1766, and his *History of the Progress and Termination of the Roman Republic* in 1783. In the first named work, he introduced the method of studying mankind in groups, and of tracing the gradual progress of entire societies, or what is now called the science of sociology. As already stated, Ferguson's views of the progress of mankind and the gradual growth of social institutions, approached nearer to the modern conception of the historical development of the human race than those of any of his predecessors. In his *History of the Roman Republic* he showed much careful research, skilful arrangement, and just philosophical reflections. But his style, though exceedingly clear and vigorous, is rather compressed and sententious.

Dr. William Russell[7] was a native of Selkirkshire, and raised himself to literary distinction in the midst of many difficulties. He was the author of a useful *History of Modern Europe*, of which the first two volumes appeared in 1779, and three others in 1784, bringing it down to 1763. This history was long popular, and continuations have been made to it by Dr. Coote and others.

Dr. Robert Watson,[8] professor of rhetoric in the University of St. Andrews, is the author of a History of Philip II. of Spain, which was published in 1776, and was intended as a continuation of Robertson's History of Charles V. He also left unfinished a History of Philip III., which was completed by Dr. Thomson, and published in 1783.

Dr. John Gillies,[9] historiographer for Scotland to His Majesty George III., wrote *The History of Ancient Greece, its Colonies and Conquests*, which appeared in 1784. It is a work which exhibits historic ability and research. The sixth edition of it was issued in four volumes in 1820. He was the author also of a *View of the Reign of Frederic II. of Prussia*; a *History of the World from the Reign of Alex-*

[7] Born in 1741; died 1793.
[8] Born in 1730; died 1780.
[9] Born in 1747; died 1836.

ander to Augustus, which was published in 1807-10; and produced English Translations of Aristotle's Ethics, Politics, and Rhetoric.

To his translation of the Rhetoric he prefixed a long introduction in which, after showing its importance as a work of taste and criticism, and its connection with Aristotle's other writings, he opened an attack on modern philosophy in general, and on the Scottish School in particular. He animadverts adversely on the views of Adam Smith, Reid, Lord Kames, and especially on the writings of Dugald Stewart. Their views he maintained were all wrong, while those of the mighty Stagirite were alone right.

George Chalmers,[10] a native of Fochabers, in Morayshire, is the author of a number of works on various subjects. His *History of the United Colonies, from the Settlement to the Peace of 1763*, appeared in 1780; among his other writings may be mentioned, a *Life of Sir David Lindsay*, with an edition of his works, and a *Life of Mary Queen of Scots drawn from the State Papers*. But his greatest work is *Caledonia*, the first volume of which was published in 1807; other two large volumes were issued in his lifetime, but it was left unfinished. This work contains a mass of minute antiquarian details of the early periods of Scottish history, together with topographical and historical accounts of the different counties; it embodies a vast collection of facts and incidents of much value, but there is little method in it, and his style is not attractive. A new edition of it has recently been published by Mr. Gardner, which includes a large quantity of MS. prepared by Chalmers, but left unprinted when he died, thus completing the work as far as possible.

Malcolm Laing[11] is the author of a History of Scotland. He was educated for the Scottish bar, and passed advocate in 1785. In 1800

[10] Born 1742; died 1825.

[11] Born in 1762; died 1818. There are other historical writers of more or less note, a few of whom I can only briefly mention. Ruddiman, the eminent Latin grammarian, edited an edition of Buchanan's *History of Scotland*, and published several historical memoirs. Dr. Alexander Adam, rector of the High School of Edinburgh, is the author of *Roman Antiquities* and *A Summary of Geography and History*, etc. John Pinkerton was a native of Edinburgh, born in 1758, and died at Paris in 1825. He distinguished himself by the vehement controversial tone of his historical writings, and by the obstinacy of his unreasoned notions; still, he was an industrious collector of forgotten fragments of ancient history.

His first historical effort was a *Dissertation on the Origin of the Goths*, in which he enounced the strange theory which he maintained to the end of his days, namely, that the Celts of Ireland, Wales, and Scotland are savages, and

his *History of Scotland, from the Union of the Crowns in* 1603 *to the Union of the Kingdoms in* 1707, was published. It is an able work, and of very high historical value. He possessed analytic and critical powers which enabled him to estimate evidence at its value; and notwithstanding his strong Whig opinions, and his love of liberty, his historical integrity is unimpeachable. But he attacked Macpherson, the translator of Ossian, with unmerciful severity. Though a clear and vigorous thinker, he was not a great master of historic style.

Section II.

Historical Literature of the Nineteenth Century.

The nineteenth century has been remarkable for an increasing interest in all departments of historical literature; for more thorough research, critical examination of evidence, more exhaustive treatment, and withal a perceptible broadening and deepening of historic conceptions. The methods of investigating historical subjects, and social phenomena, have undergone a marked change within the present century; and, as a consequence, the opinions and the convictions of the people have also been greatly modified.

Dr. Thomas M'Crie [12] is best known as the author of the *Life of John Knox*, and the *Life of Andrew Melville*. The first appeared in 1813, and has passed through many editions; the second has not been so popular, though it is an able work. He also wrote *Memoirs of Veitch and Brysson*, two Scottish ministers and supporters of the Covenant. He composed able and valuable Histories of the Reformation in Italy and in Spain, and various other sketches and papers. Dr. M'Crie was gifted with a vigorous intellect, and all his writings display much varied and careful research, and a masterly literary

have been savages since the world began. He next produced an *Inquiry into the History of Scotland preceding the Reign of Malcolm III.*, in which he argued at great length on the history of the Goths, and the conquests which he asserts they achieved over the Celts in their progress through Europe. In 1796, he issued a *History of Scotland during the Reign of the Stuarts*, the most valuable of all his works. He also edited, but very indifferently, a series of Ancient Lives of Scottish Saints under the title *Vitæ Antiquæ Sanctorum Scotiæ*, a revised and enlarged edition of which has recently been issued.

[12] Born 1772; died 1835.

ability. His style is clear, animated, and easy ; and his works are highly esteemed by all students of history.

Mr. James Mill attained distinction as a historian as well as a philosopher and a political writer ; he was a man of great intellectual power.[13] His *History of British India*, which was begun in 1806, was published in 1817-18, in five volumes, and is probably the ablest work on our Indian Empire which has yet appeared. His analytic powers and grasp of principles enabled him to master social phenomena, which less gifted minds fail to see or to seize.

John Dunlop, Esq., a Scottish advocate and sheriff of Renfrewshire, wrote a *History of Fiction*, which appeared in 1814, in three volumes. It is a work of much merit and value. He also wrote a *History of Roman Literature*, from the earliest period to the close of the Augustan age, in three volumes. His latest work was *Memoirs of Spain during the Reigns of Philip IV. and Charles II.*, which was published in 1834, in two volumes. He died in 1842.

Patrick F. Tytler[14] was the author of a *History of Scotland*, and other works—chiefly of a biographical character. His *History of Scotland* embraces the period from the accession of Alexander III. to the union of the Crowns of England and Scotland in 1603. The first volume was published in 1828, and the others followed at intervals till the work was completed in nine volumes. It is a work of high historical value. His pages evince the results of much original research and great industry. Many documents and State papers were printed for the first time in the appendices to the volumes. His style is plain and animated, but somewhat diffuse and redundant.

Sir Archibald Alison was a son of the Rev. Archibald Alison, as already incidentally mentioned, and was born in 1792. He was educated in Edinburgh, studied law, and was called to the Scottish bar in 1814. He was appointed sheriff of Lanarkshire in 1832, and was created a baronet in 1852. The idea of his *History of Europe* was conceived when on a visit to Paris in the eventful year of 1814 ; and henceforth he devoted much research and study to its preparation.

[13] An excellent account of his life and writings, by Dr. Bain, has been published.

[14] Tytler belonged to the family of Woodhouselee, whom I have already mentioned in a preceding section. In the latter years of his life he enjoyed a pension of £200 per annum. He died in December, 1849 ; and an interesting account of his life has been published by the Rev. John Burgon, M.A., in 1859.

The work covers the period from the commencement of the French Revolution in 1789 to the restoration of the Bourbons in 1815. Its first instalment appeared in 1833, and the concluding volumes in 1844. It has since gone through nine or ten editions. It contains a vast store of facts and details relating to a very important and memorable period of modern history. In the later years of his active life, he produced a continuation of his *History* to the accession of Louis Napoleon in 1852, in eight volumes, which appeared at intervals from 1852 to 1859. But the continuation is not equal in accuracy and merit to the earlier history, and some of his peculiar opinions are pushed to greater extremes. In politics he was a firm Conservative, and a strong opponent of Free Trade. Sir Archibald died in May, 1867.

Alison's *History of Europe*, as might be expected in so wide and great a subject, has merits and defects. His exertions in personal observation of many of the localities of the events and scenes which he described, his industry in collecting available materials, and his patient and careful researches, are great merits, which imparted a freshness to his narrative and an animation to his descriptions rarely met with in any history. His mastery of method and arrangement was also creditable ; but on the other hand, his style has often been severely animadverted on—he has been charged with verbosity and excessive pomp, with being careless, turgid, and obscure. On the whole, the work has been exceedingly popular, it has been translated into all European languages ; this, however, may be partly accounted for by the intensely absorbing interest of the period and the events of which it treats. Although Alison cannot be called a great historian, still he has produced an interesting work.

Thomas Carlyle was a noted man of genius and a voluminous writer. He was a son of a farmer, and born on the 4th of December, 1795, at the village of Ecclefechan, in Annandale, a beautiful pastoral district, rich in Border traditions, old castles, and historic associations. He was educated at the Grammar School of Annan, and the University of Edinburgh. At the University he was distinguished in mathematics, and subsequently he acted as teacher of mathematics in Annan, and afterwards in Kirkcaldy. In 1818 he went to Edinburgh, where he had the use of the University Library, and he then wrote a number of short biographies and other articles for the *Edinburgh Encyclopædia*. He wrote a *Life of Schiller*, and also commenced to translate German works. In 1824 he translated

Goethe's *Wilhelm Meister*, which was favourably received. He married Miss Jane Welsh in 1825. She was a descendent of John Knox, a daughter of Dr. Welsh, Haddington; and through her Carlyle acquired the small property of Craigenputtoch, in Dumfriesshire, at which he resided for eight years. In this retired residence he wrote articles for the *Foreign Review*, and his *Sartor Resartus*, which first appeared in *Fraser's Magazine* in 1833-34. Carlyle left Craigenputtoch in 1834 and went to London, and finally settled in the famous House, No. 5 Cheyne Row, Chelsea. In 1837 he delivered a series of lectures on German Literature in London, and in the following year another course on the Successive Periods of European Culture. Again in 1839 he delivered a course of lectures on the Revolutions of Modern Europe, and another on Heroes and Hero Worship in 1840. These lectures greatly extended his popularity. The lectures on Heroes and Hero Worship were published in book form, and widely read.

Carlyle wrote on many branches of literature, embracing critical essays, political and satirical pamphlets in various forms, and biography and history. His critical and miscellaneous essays extend to seven volumes, and treat on many subjects. Some of them are exceedingly good, such as those on Burns, Edward Irving, Voltaire, Goethe, and others; and the whole of his essays are characteristic and interesting. His political views were presented in a pamphlet entitled "Chartism," published in 1839, and in another, "Past and Present," which appeared in 1843. In these he enunciated some important truths, and made scathing observations against all shams, cant, formulas, and so on; yet he has very little to offer in the form of constructive remedies for the existing evils of society, either political or social. He issued another series of political tracts in 1850, entitled "Latter-day Pamphlets," and in these he appeared as the vehement and irate Censor, with all the exaggerating peculiarities of his style in greater profusion. He assumed the characteristics of a mere worshipper of force, and an ardent advocate of all coercive measures. Improved prisons and schools for the reform of criminals, poor laws, the churches, the aristocracy, Parliament, and other institutions, as then constituted, were all attacked and ridiculed in a scathing style. On some political points and administrative abuses, however, his bold and stinging satire was quite justifiable.

It was chiefly in biography and history that Carlyle attained distinction and fame as a writer. In 1837 his famous work, *The*

French Revolution, a History, was published. It is the best of all Carlyle's works, and is a very remarkable book. It presents a masterly and vivid panoramic view of the Revolution. He exerted his great powers of description in this work with striking effect.[15] As a specimen of his style, I will quote the passage on the death of Marie Antoinette :—

"Is there a man's heart that thinks without pity of those long months and years of slow-wasting ignominy; of thy birth, self-cradled in imperial Schonbrunn, the winds of heaven not to visit thy face too roughly, thy feet to light on softness, thy eye on splendour; and then of thy death, or hundred deaths, to which the guillotine and Forquier-Tinville's Judgment-bar was but the merciful end? Look there, O man born of woman! The bloom of that fair face is wasted, the hair is gray with care; the brightness of those eyes are quenched, their lids hang drooping, the face is stony pale, as of one living in death. Mean weeds, which her own hand has mended, attire the Queen of the World. The death-hurdle where thou sittest pale, motionless, which only curses environ, has to stop; a people, drunk with vengeance, will drink it again in full draught, looking at thee there. Far as the eye reaches a multitudinous sea of maniac heads, the air deaf with their triumph yell! The living-dead must shudder with yet one other pang; her startled blood yet again suffuses with the hue of agony that pale face which she hides with her hands! There is there no heart to say, God pity thee! O think not of these; think of Him whom thou worshippest, the crucified—who also treaded the wine-press alone, fronted sorrow still deeper; and triumphed over it and made it holy, and built of it a sanctuary of sorrow for thee and all the wretched! Thy path of thorns is nigh ended, one long last look at the Tuilleries, where thy step was once so light, where thy children shall not dwell. The head is on the block, the axe rushes—dumb lies the world; the wild yelling world and all its madness is behind thee."

Carlyle's collection of Oliver Cromwell's *Letters and Speeches, with Elucidations*, appeared in 1845, in two volumes. It is an excellent work, and a valuable contribution to the historical materials of the seventeenth century. His own additional Elucidations, historic and descriptive, are important, and often very characteristic and interesting.

[15] A very fair analysis and criticism of Carlyle's style is given in the late Professor Minto's *Manual of English Prose Literature*.

His *Life of John Stirling* was published in 1851. It is a warm tribute by Carlyle to the memory of a personal friend. Stirling was an amiable and accomplished man, and his friends were much attached to him. He had written some attractive volumes in prose and verse ; and he died in 1844, in his thirty-eighth year.

Carlyle had been long working on his *History of Friedrich the Great of Prussia*, and in 1858 the first and second volumes of it appeared, the third and fourth in 1862, and the fifth and sixth completing the work in 1865. It is a work evincing great research, admirable descriptions of battle-fields and historic scenes, vivid and sage remarks on men and things, and touches of pathos and humour. Yet, viewed according to a recognised standard, it fails to reach the higher and genuine characteristics of history ; and in truth, it is rather a personal biography and a glorification of the hero, Friedrich II., enlivened and widely varied by the writer's rare genius. If Carlyle was not a pure worshipper of mere force and might, he had, at least, an excessive veneration of individual great men—heroism; so he made them the central conception and wove events and movements around them for their special glorification, treating other men with scorn, and ignoring many important historic influences. He scouted the idea of tracing the relation of causes and effects in history, or the gradual development of political institutions. For the sake of the central hero, he sums up an estimate of the eighteenth century thus :—" What little it did, we must call Friedrich ; what little it thought, Voltaire."

In spite of his veneration of might, and some unreasoned impulses, he was a great historical biographer. His fine power of description, insight of character, and the power of seizing reality, the faculty of discerning and selecting appropriate facts and incidents, and weaving these into a stirring narrative, enabled him to attain a marked distinction in this branch of literature. He had many readers and admirers, and his influence has been widely felt.

He was elected Lord Rector of the University of Edinburgh, and on the 2nd of April 1866, delivered his installation address. Before he returned home, his wife died at London, on the 21st of April. His subsequent writings mostly consisted of short addresses and articles on the topics of the day; and a *History of the Early Kings of Norway*, published in 1875. He died on the 4th of February, 1881.[16]

[16] His *Reminiscences*, edited by Mr. Froude, were published in 1881, in two volumes.

Dr. John Hill Burton, a native of Aberdeen, was born in 1809; and having studied law, was called to the bar in 1833. He was a hard working student, and at an early period of his life, produced a work on the *Scottish Bankruptcy Law*, and a *Manual of the Law of Scotland*. He was also the author of a small volume, now much sought after, *On Political and Social Economy*, published in 1849. He was an exceedingly industrious writer, chiefly in the field of Scottish history and biography.

In 1846, his *Life and Correspondence of David Hume* was published in two volumes; and the following year, his *Lives of Lord Lovat* and *Duncan Forbes of Culloden* appeared. Both works are valuable contributions to the historic literature of Scotland. In 1864, his work entitled *The Scot Abroad* appeared in two volumes; it consists of an account of the relations of Scotland and Scotsmen to foreign countries, and contains many interesting sketches and anecdotes.

His longest work is *The History of Scotland, from Agricola's Invasion to the Revolution of* 1688, which appeared in 1867-70; he had before written a *History of Scotland from the Revolution to the extinction of the last Jacobite Insurrection*, which was published in 1853. Thus, presumably following the example of Hume, he wrote and published the latest part of his history first.[17] This History is much marred by the author's prejudice against the Celtic people of Scotland. A revised edition of the whole work has been published.

Besides the important works mentioned above, Dr. Burton occasionally contributed papers to the *Westminster Review*, *Blackwood's Magazine*, and other literary journals, and sometimes articles to the *Scotsman*. Moreover, he edited several of the volumes of the *Records of the Scottish Privy Council of the Sixteenth Century*, and wrote a preface to the first volume. He also contributed many articles to biographical dictionaries. His last work was a *History of Britain in the Reign of Queen Anne*, in three volumes, published in 1880. He died in 1881.

The late Robert Blakey was the author of a number of works:— *History of the Philosophy of the Human Mind*, in four volumes, in which a pretty complete account of works on philosophy, especially British works in this department, is given down to about the middle of the present century. His *History of Political Literature*, published

[17] One of Hume's opponents, who had a waggish turn, once said that he had written his history backwards.

in 1855, in two volumes, is a very useful and interesting work, written in a clear, animated, and vigorous style.

Dr. William F. Skene was born on the 7th of June 1809. Having studied for the profession of law, he became a member of the Society of Writers to the Signet in 1831. After the death of Dr. John H. Burton, Dr. Skene was appointed Historiographer Royal for Scotland.

He edited a publication entitled *The Four Ancient Books of Wales*, which appeared in 1868. The work contains an English translation, rendered by two eminent Welsh scholars, of the Cymric poems, tales, and romances connected with the early history of Wales. The translation is from the oldest known Welsh MSS., and the work has considerable historical value. Dr. Skene edited another volume under the title of *The Chronicles of the Picts and Scots*, which consists of a number of short pieces, fragments, and some extracts from early Irish chronicles, to which he wrote a long and interesting preface. He also edited and wrote introductions to several of the series of volumes known by the title of *The Historians of Scotland.*

His chief work is the *History of Celtic Scotland,* published in 1876-81, in three volumes, of which a second edition has been issued. He announced that this work was designed to ascertain all that could be extracted from the early authorities; and it may be granted that when he had written matter to work upon, his conclusions were fairly satisfactory. He was very industrious and painstaking; but his mind was narrow and glimmering. He had no philosophic grasp, and very little of the critical faculty. He shows lamentable defects in the discrimination and estimation of historical evidence, and seemed to be unconscious of the value of circumstantial evidence, and its use for limiting, correcting, or confirming, incomplete and erroneous statements of facts and events. Thus he often placed too much reliance on fragments of writings, old chronicles, and traditions. He introduced into his History a fanciful body, viz., "The Seven Earls of Scotland," who enjoyed the privilege of controlling the Kings in early times. In truth, his *Celtic Scotland* has been rather much praised. He died in August, 1892.

In a chapter on Scottish historical literature, it seems requisite to give some account of the Record scholars, and those who have worked in order to place important historical materials within the reach of historical students. The first who claims to be remembered is Mr. Thomas Thomson, the able and careful editor of the *Scots Acts of Parliament*, and other national records. For many years he

worked hard in the General Register-house in Edinburgh, and under him others were trained and encouraged by his example in this branch of research. Space would fail to signalise all those who have followed in the footsteps of Mr. Thomson, and have rendered valuable service to their country in the wide field of national records and historical materials.

Mr. Cosmo Innes, a native of the parish of Durris, Kincardineshire, was an eminent Record scholar and an industrious historical student. He edited the first volume of the *Scots Acts of Parliament*, containing all the earliest laws and fragments of legislation of Scotland, several of the *Old Spalding Club* publications, and a number of the volumes printed by the Clubs in the south, all containing valuable historical materials. He also edited the earlier volumes of the *Facsimiles of the National Manuscripts of Scotland*, a magnificent work, issued under the direction of the Record Commission, as well as the first volume issued by the Burgh Record Society; and spent years of labour in preparing an exhaustive index to the *Scots Acts*. Mr. Innes was also the author of three notable works: *Scotland in the Middle Ages*, 1860; *Sketches of Early Scottish History*, 1861; and *Legal Antiquities;* all these formed valuable contributions to the history of Scotland.

Another notable man of this class was Dr. John Stuart, a native of the parish of Forgue, in Aberdeenshire. He was an advocate in Aberdeen, and for many years acted as the secretary of the Old Spalding Club, of which he was one of the originators; but for a number of years before his death, which happened in the summer of 1877, he was employed in the General Register-house at Edinburgh.

He edited and wrote the prefaces to the well-known work, *The Sculptured Stones of Scotland*. His prefaces and notes to this work are admirable specimens of antiquarian research, clear and well reasoned exposition. To the *Book of Deer*, which he edited, he wrote a long and very valuable preface. He also edited and wrote prefaces to other volumes of the Old Spalding Club, including the *Burgh Records of Aberdeen*.

Joseph Robertson, a native of Aberdeen, born in 1810, also one of the original members of the Old Spalding Club, was a distinguished Record scholar; and edited a number of volumes for the Club. But it is in the work entitled *Statuta Ecclesiæ Scoticanæ*, a collection of the Canons of the Roman Catholic Church in Scotland prior to the Reformation, that his Record scholarship is fully manifested. The pains-

taking labour which he devoted to this work is almost incredible, his research is both accurate and exhaustive to the minutest detail. His preface to the work is a monument of scholarship, sound judgment, and historic elucidation, while the body of notes and illustrations are of deep interest and great historic value. He is also the author of a history of the city of Aberdeen, entitled the *Book of Bon-accord*, which unfortunately he left unfinished. He died in 1866.

The late Dr. David Laing, a gifted and esteemed gentleman, who for long held the office of librarian to the Writers to the Signet, was a large contributor to the historic materials of Scottish history. Laing's[18] efforts were specially directed to the culture and the elucidation of the literary history of Scotland in the early periods, and to the history of art. He published some collections of early poetry, and edited the poems of Hendryson, Dunbar, and Sir David Lindsay; and in many other ways endeavoured to advance the culture of history and art.[19]

The Criminal Trials in Scotland from the end of the Fifteenth Century to 1624, carefully edited and ably illustrated by Robert Pitcairn, W.S., form a valuable contribution to the history of domestic life and manners. He died in 1855. In this connection, *The Domestic Annals of Scotland*, by Dr. Robert Chambers, are well worthy of notice. Dr. R. Chambers was also the author of an excellent *History of the Rising of 1745*, which has passed through eight editions. It is an interesting and very valuable contribution to our historical literature.

Mr. E. W. Robertson was the author of a work entitled *Scotland under her early Kings*, published in 1862, in two volumes, which presents a history of the kingdom down to the close of the thirteenth century. It shows much research and industry, and commendable exactness of statement in matters of fact. Mr. Robertson also published a volume of historical essays in 1872.

Mr. William Mure, of Caldwell,[20] was the author of *A Critical His-*

[18] I have already noticed his service to the nation by his edition of Knox's works.—*History of Civil. Scot.*, Vol. II., p. 346.

[19] It may be mentioned that Laing, after the death of Dr. David Irving, edited his *History of Scottish Poetry*, which in its first form was published in 1804; but Irving seems to have worked and revised at it almost to the end of his life. Laing published the work in its final form in 1861, with a memoir of the author. Irving was also the author of a series of biographical sketches of eminent Scotsmen.

[20] Born in 1799; died 1860.

tory of the Language and Literature of Ancient Greece, published in 1850-53, in four volumes. A fifth volume appeared in 1857, but the work was left incomplete when he died. He devoted a considerable portion of his history to an examination of the Iliad and Odyssey, and the conclusion which he arrived at is, that each of these poems was originally composed substantially as we now possess them. This is a subject which has engaged the attention of many able classical scholars. Mure presented an interesting account of the origin and the early history of Greek prose literature, and a long critical examination of Herodotus.

George Grub, LL.D., was born in Old Aberdeen in 1812. He was educated at King's College, Aberdeen, and graduated in 1829. Having studied law, he was admitted a member of the Society of Advocates in 1836, and in 1843 he was appointed Lecturer on Scots Law and Conveyancing in Marischal College. At the union of the Colleges in 1860, Dr. Patrick Davidson became Professor of Law, and Dr. Grub was appointed his substitute. On the death of Dr. Davidson in 1881, Dr. Grub succeeded him in the Chair. He retired from the professorship in 1891; and died on the 23rd of September in 1892. He was a very considerate and kindly gentleman.[21]

He was one of the original members of the Old Spalding Club, and edited several of the works issued by it. He is the author of *The Ecclesiastical History of Scotland*, published in 1861, in four volumes. It is a work of much merit and research, and remarkable for its candour and impartiality. His style is plain and clear.

In conclusion, though perhaps all the historical writers have not been enumerated that might be named, still enough has been given to show that a considerable amount of effort and talent has been devoted to history during the last and present century, and that the taste for this branch of literature has been steadily spreading amongst the people.

[21] Robbie's *History of Aberdeen*, p. 490. 1893.

CHAPTER XLI.

Literature of the Eighteenth and Nineteenth Centuries (continued)

Section I.

Poetry of the Eighteenth Century.

IN the preceding volumes of this work some account of the ballad literature and the poetry of Scotland was presented. In the period now under review, the number of poetical writers had largely increased, and it should be understood that the poets noticed in the following pages may not in every case be the ones most worthy of attention. Among them will be found poets who wrote in English, and others who composed in their native tongue.

The fierce struggles of the seventeenth century were unfavourable to efforts of culture of any kind, but during the eighteenth century the internal condition of the country improved. When Allan Ramsay [1] appeared as an author, the nation was not altogether unprepared to receive his humorous and lively sketches of Scottish life. Although he had a keen literary taste, he applied himself attentively to business, and did not commence writing till he was about twenty-five years of age. His writings are pretty various, and consist of comic, satirical, pastoral pieces, songs, and tales; he sometimes wrote in English, but usually in Scotch, in which his best efforts appeared. Ramsay's tales are very humorous, but occasionally rather indelicate. Some of his songs were long favourites, such as "The Last Time I came o'er the Moor," "Lochaber no More," and "The Yellow Haired Laddie."

In 1721 he published a collection of his poems, which had before

[1] He was born in the village of Leadhills, in Lanarkshire, in 1686, his father having died when he was an infant. Allan remained at Leadhills till his fifteenth year, and was educated at the village school, where he learned a smattering of Latin. At the age of fifteen he was apprenticed to a wig-maker in Edinburgh, at which occupation he worked for thirteen or fourteen years. He then set up as a bookseller, and soon embarked in earnest on his literary career. The Easy Club was founded in 1712, and Ramsay addressed it in a rhymed effusion. He was a social man, and to this Club read a number of his early efforts in verse, which gave him confidence. He died in 1758.

appeared in leaflets. In 1724 the first volume of his well-known collection, *The Tea Table Miscellany*, appeared, and was followed at intervals by other three volumes, which contained some of his own songs. Soon after he published *The Evergreen*, a collection of Scottish poems written before 1600, in which he presented as ancient poems two pieces of his own. In one of these, "The Vision," he has obviously drawn inspiration from an Ossianic source, as may be seen in the following lines :—

"Great daring darted frae his e'e,
A braid sword shogled at his thie,
On his left arm a targe ;
A shining spear filled his right hand,
Of stalwart make in bane and brawnd,
Of just proportion large ;
A various rainbow-coloured plaid
Owre his left spaul he threw,
Down his braid back, frae his white head,
The silver wimplers grew."

In 1725, his celebrated pastoral drama, *The Gentle Shepherd*, appeared, and was received with almost universal approbation ; and his fame soon extended beyond the limits of Scotland. An edition of his poetical works was published in London, in 1731, and another in Dublin, in 1733. This drama is Ramsay's greatest work ; its conception and construction are exceedingly natural. He drew his shepherds from real life, placed them in scenes which he had seen, and makes them utter the idiomatic speech of their own native vales and hills. His art is chiefly shown in the selection of materials, in the grouping of natural and well-defined characters, in the clear conception of an interesting, natural, and romantic plot ; and in the forming of every character, speech, and incident into a harmonious and pleasing unity, which finally results in a charming work.

Ramsay possessed several of the qualities of a real poet, imagination, the elaborative faculty, passion, wit, humour, and pathos. The pathos in some of his poems and songs, is very remarkable ; his "Lochaber no More" breathes a strain of genuine feeling with touches of pure pathos. Though not a very original genius or a great poet, yet he has the merit of having led the Scottish poetical revival of the eighteenth century.[2]

[2] Allan Ramsay was the first that established a circulating library in Scotland. In his shop many of the wits of Edinburgh used to meet for amusement, and to hear the news of the day. He continued to sell and lend out books till towards the close of his life.

William Hamilton, of Gilbertfield, wrote several pieces of verse which were printed in Watson's Collection. He also entered into a poetical correspondence with Ramsay, and through this, his verses were printed along with Ramsay's works. Hamilton's verses are not of high poetical merit, though some of them present keen humorous characteristics. In 1722 his modernised edition of Blind Harry's *Wallace* appeared, which was long popular among the country people. He died in 1751 at an advanced age.

Robert Crawford was a contributor to Ramsay's *Tea-table Miscellany,* and was the author of two fine lyrics—"The Bush aboon Traquair," "Tweedside," and other songs. He was drowned when coming from France in 1733, in his thirty-eighth year.

James Thomson was born at Ednam in Roxburghshire, in 1700, where his father was minister. He was educated at the University of Edinburgh; but the death of his father, in 1720, seems to have cut short his University career. He manifested a taste for poetry at an early age, and wrote in English. The earliest printed specimen of his poetry appeared in 1720, in the *Edinburgh Miscellany* issued by the Athenian Society. In 1725 Thomson proceeded to London to push his fortune, where he had a pretty hard struggle. His description of Winter was published in 1726, for which he received three guineas; and a second and a third edition appeared the same year. In 1728 his work, entitled *The Four Seasons,* was published by subscription. His tragedy of *Sophonisba* appeared in 1730, and had a brief success on the stage. *The Castle of Indolence,* on which he had worked long, was published in May, 1748. In the end of the following August he died.

Although a highly-gifted poet, he advanced slowly, by often repeated efforts, toward the realisation of his ideal of poetic style and finish of composition. This is seen in the different editions of his *Seasons,* on each succeeding one he made many improvements in thought and diction; while the superiority in style and taste of *The Castle of Indolence,* compared with his earlier efforts, is very manifest. In short, he was staidly working to his strength, when cut off in the prime of life. His genius was luxuriant, glowing, and enthusiastic, but required disciplining. His feelings were warm and wide, his sympathies universal, embracing all mankind. His love of nature was intense; and his heart and soul throbbed with humanity. The following few stanzas from *The Castle of Indolence* may be taken as a brief specimen of his powers and style:—

"Behold! ye pilgrims of this earth, behold!
See all but man with unearned pleasure gay:
See her bright robes the butterfly unfold,
Broke from her wintry tomb in prime of May;
What youthful bride can equal her array?
Who can with her for easy pleasure vie?
From mead to mead with gentle wing to stray,
From flower to flower on balmy gales to fly,
Is all she has to do beneath the radiant sky.
Behold the merry minstrels of the morn,
The swarming songsters of the careless grove,
Ten thousand throats! that from the flowering thorn,
Hymn their good God, and carol sweet of love,
Such grateful kindly raptures then emove;
They neither plough, nor sow; ne, fit for flail,
E'er to the barn the nodding sheaves they drove;
Yet theirs each harvest dancing in the gale,
Whatever crowns the hill, or smiles along the vale.
Outcast of nature, man! the wretched thrall
Of bitter dropping sweat, of sweltry pain,
Of cares that eat away the heart with gall,
And of the vices, an inhuman train,
That all proceed from savage thirst of gain:
For when hard-hearted Interest first began
To poison earth, Astræa left the plain;
Guile, violence, and murder, seized on man,
And, for soft milky streams, with blood the rivers ran!
Come, ye who still the cumbrous load of life,
Push hard up hill; but at the furthest steep
You trust to gain, and put an end to strife,
Down thunders back the stone with mighty sweep,
And hurls your labours to the valleys deep,
For ever vain; come, and, withouten fee,
I in oblivion will your sorrows steep,
Your cares, your toils, will steep you in a sea
Of full delight: O come, ye weary wights, to me."

Thomson wrote a number of short poems and songs, some of which were popular; but his fame mainly rests on the two poems—*The Seasons* and *The Castle of Indolence*. The appearance of these two poems marked an era in the history of English poetry. The chief characteristics of these poems consist in the genuine and charming realisation of the beauty of external nature; and it was in this that his genius and originality appeared. Although he was not the founder of a school, yet he wielded a marked influence over the poets of his time, and also on some eminent English poets of a later period.

David Mallet, whose original name was Malloch, was a native of Perthshire, and born about the end of the seventeenth century. He studied for some time under Professor Ker at King's College, Aberdeen; and subsequently, having obtained a situation as tutor in the family of the Duke of Montrose, in 1723 he went to London with the Duke's family. In 1724 his ballad, entitled *William and Mary*, appeared, which was long popular, and continued to be printed in school books till past the middle of the present century. Afterwards he engaged in a variety of literary ventures, none of which had much real merit. In 1728 his poem, *The Excursion*, was published, in which the imitation of Thomson's *Seasons* is simply shameless. He wrote several tragedies, and a *Life of Bacon*. He seems to have been a venal writer, and not a very honest man. He died at London in 1765.

John Armstrong, the son of a minister, was born in 1709 at Castleton in Roxburghshire. He studied medicine in Edinburgh, and graduated in 1732. Shortly after he went to London, and became a friend of Thomson and a writer of verses. In 1744 his didactic poem in blank verse, entitled *The Art of Preserving Health*, was published, which is his chief work. It is divided into four books, and the tone of the verse rises or sinks according to the character of the subject. The first book treats on air; the second on diet; the third on exercise; and the fourth on the passions. There are a few touching passages in the poem, but on the whole it is rather stiff. He wrote a considerable number of pieces of verse on various subjects. He died in 1779, and left £3000.

Robert Blair[3] was a native of Edinburgh, the son of a Scottish minister, and, having studied for the Church, in 1731 he was appointed minister of the parish of Athelstaneford, in East Lothian. He was a cultured man, a botanist and florist, and of pleasing manners. He had a large family, and one of his sons, an eminent lawyer, rose to be Lord President of the Court of Session. He was the author of a poem entitled *The Grave*, which is written in blank verse, and appeared in 1743. Although of limited scope, it is a powerful poem. The following lines are from his description of the death of the strong man:—

> "Strength, too, thou surly and less gentle boast
> Of those that laugh loud at the village ring!
> A fit of common sickness pulls thee down

[3] Born in 1699; died in 1746.

With greater ease than e'er thou didst the stripling
That rashly dared thee to the unequal fight.
What groan was that I heard? deep groan, indeed,
With anguish heavy laden let me trace it:
From yonder bed it comes, where the strong man,
By stronger arm belaboured, gasps for breath
Like a hard-hunted beast. How his great heart
Beats thick, his roomy chest by far too scant
To give the lungs full play! What now avail
The strong-built sinewy limbs and well-spread shoulders?
See, how he tugs for life, and lays about him,
Mad with his pain! Eager he catches hold
Of what comes next to hand, and grasps it hard,
Just like a drowning creature. Hideous sight!"

William Hamilton, of Bangour,[4] was descended from an old Ayrshire family, and attained some distinction as a poet. He was a contributor to Ramsay's *Tea Table Miscellany*, and usually lived in Edinburgh. In 1745 he joined the standard of Prince Charles, but in 1749 he received a pardon; and in 1750, on the death of his brother, he succeeded to the estate of Bangour. A collection of his poems was published at Glasgow in 1760. His language and style is English, and rather ornate. He composed a serious poem on "Contemplation," and a national one on the "Thistle," in blank verse. He had a lively fancy, but lacked intellectual power, and his verse wants strength. The best of his efforts is his ballad called "The Braes of Yarrow."

Alexander Ross was born in 1699 at Kincardine O'Neil in Aberdeenshire, and was educated at Marischal College. After graduating in 1718 he acted as schoolmaster in the parish schools of Moyne and Lawrencekirk, and in 1732 he was appointed schoolmaster of Lochlee in Forfarshire. At Lochlee he spent the rest of his life. He was the author of *Helenore*, or, *The Fortunate Shepherdess*, published in 1768, and composed in Scotch. Dr. Beattie took a warm interest in Ross, and addressed a letter and a poetical epistle in praise of the poem to the *Aberdeen Journal*, and the work soon became popular. *Helenore* is a pastoral narrative poem, extending to upwards of 4000 lines, and it has much merit; it is as bold and true to nature as Ramsay's *Gentle Shepherd*, though his poetic gift was inferior in some points to that of his predecessor. His poem is vigorous, interesting, and the chief characters well drawn. He was also the author of a number of songs, of which the most popular are "The Rock and the Wee Pickle

[4] Born in 1704; died in 1754.

Tow," "Woo'd an' Married an' a'," and "To the Begging we will Go." These have energy and much humour. Ross left a number of unpublished writings in verse and prose. He died at Lochlee in 1784, at the advanced age of eighty-five.

John Skinner was born in 1721 at Birse, Aberdeenshire, where his father was parish schoolmaster. He became an Episcopal minister, and officiated at Linshart, Longside, in Aberdeenshire. He was a humble, very amiable, and cultured gentleman. After the suppression of the Rising of 1745, for his Church's political and his own poetical offences, he was arrested and imprisoned in 1753 for six months in Aberdeen. His son, John Skinner, was elected bishop of Aberdeen in 1782. After a long, a conscientious and industrious life, he died in his son's house at Aberdeen in 1807, at the age of eighty-six years.

Skinner was gifted with a vigorous mind. He had imaginative power, keen feelings, and a fine sense of the humorous; while a number of his poetical pieces and songs show characteristic merits. The most noted of his songs are "Tullochgorum," "John O' Badenyon," and "The Ewie wi' the Crooked Horn." He was also the author of *Ecclesiastical History of Scotland*, published in 1788, in two volumes, and a number of other religious and theological works.

Dr. Thomas Blacklock, the son of a bricklayer, was born at Annan, Dumfriesshire, in 1721. When an infant of six months he was entirely deprived of sight by small-pox. But his father amused the solitary boy by reading to him, and he became familiar with the writings of some of the English poets, and particularly with the works of Thomson and Allan Ramsay. When he was nineteen years of age his father was accidentally killed. Shortly after Dr. Stevenson took him to Edinburgh, where he was enrolled as a student of divinity. A volume of his poems appeared in 1746, which was re-issued in 1754 and 1756. He was licensed to preach in 1759, and was appointed minister of Kirkcudbright. But the parishioners were opposed to church patronage, and to the exercise of it in favour of a blind man, and he relinquished the appointment on receiving a small annuity. He afterwards resided in Edinburgh, and took boarders into his house. Notwithstanding the want of his eyesight, he had acquired a considerable degree of learning, and was an exceedingly amiable man. He was a warm friend of Burns, who often refers to him. In August, 1789, he addressed a poetical epistle to Burns, of which a few lines may be quoted :—

"Dear Burns, thou brother of my heart
Both for thy virtues and thy art.

. . . . . .

Most anxiously I wish to know,
With thee of late how matters go;
How keeps thy much-loved Jean her health?
What promises thy farm of wealth?
Whether the Muse persists to smile,
And all thy anxious cares beguile?
Whether bright fancy keeps alive?
And how thy darling infants thrive?"

Although the poems of Blacklock are not remarkable for strong sentiment or imaginative power, yet he was a fluent versifier. He also wrote several treatises on religious subjects, and an article on blindness for the *Encyclopædia Britannica*. He died in 1791.

Dr. T. G. Smollett, already mentioned in a preceding section, occasionally tried his hand at poetry as well as history and fiction. He was born in Dalquharn House, Dumbartonshire, in 1721, and educated at the Grammar School of Dumbarton, and the University of Glasgow. He served his apprenticeship with a medical practitioner in Glasgow, and, before he was twenty, proceeded to London to seek his fortune. But it is beyond my scope to narrate his chequered career. He produced no long poems, but he was the author of a number of short pieces of some merit, such as his "Ode to Independence," "Ode to Leven Water," and the "Tears of Scotland." The latter was written soon after the battle of Culloden, and refers to the cruelties committed by the English forces in the Highlands. It is a touching and powerful piece, and extends to seven stanzas. There is both fire and real pathos in it, as these lines show:—

"Mourn, hapless Caledonia, mourn
Thy banished peace, thy laurels torn!
Thy sons, for valour long renowned,
Lie slaughtered on their native ground;
Thy hospitable roofs no more
Invite the stranger to the door;
In smoky ruins sunk they lie,
The monuments of cruelty.

The wretched owner sees afar
His all become the prey of war;
Bethinks him of his babes and wife,
Then smites his breast, and curses life.

Thy swans are famished on the rocks,
Where once they fed their wanton flocks;
Thy ravished virgins shriek in vain;
Thy infants perish on the plain.

. . . . . .

Oh! baneful cause, oh! fatal morn,
Accursed to ages yet unborn;
The sons against their fathers stood,
The parent shed his children's blood.
Yet, when the rage of battle ceased,
The victor's soul was not appeased:
The naked and the forlorn must feel
Devouring flames and murdering steel.

The pious mother, doomed to death,
Forsaken wanders o'er the heath,
The bleak wind whistles round her head,
Her helpless orphans cry for bread;
Bereft of shelter, food, and friend,
She views the shades of night descend:
And stretched beneath the inclement skies,
Weeps o'er her tender babes, and dies.

While the warm blood bedews my veins,
And unimpaired remembrance reigns,
Resentment of my country's fate
Within my filial breast shall beat;
And, spite of her insulting foe,
My sympathising verse shall flow:
'Mourn, hapless Caledonia, mourn
Thy banished peace, thy laurels torn.'"[5]

[5] "I was in the coffee-house with Smollett when the news of the battle of Culloden arrived, and when London all over was in a perfect uproar of joy. . . . About 9 o'clock I wished to go home to Lyon's, in New Bond Street. . . . I asked Smollett if he was ready to go, as he lived at Mayfair; he said he was, and would conduct me. The mob were so riotous, and the squibs so numerous and incessant, that we were glad to go into a narrow entry to put our wigs in our pockets, and to take our broadswords from our belts and walk with them in our hands, as everybody then wore swords; and after warning me not to speak a word, lest the mob should discover my country and become insolent, 'For, John Bull,' says he, 'is as haughty and valiant to-night as he was abject and cowardly on the black Wednesday when the Highlanders were at Derby.' . . . When I saw Smollett again, he showed me the manuscript of his 'Tears of Scotland,' which was published not long after, and had such a run of approbation. Smollett, though a Tory, was not a Jacobite, but he had the feelings of a Scotch gentleman on the reported cruelties that were said to be exercised after the battle of Culloden."—*Autobiography of the Rev. Alex. Carlyle*, p. 190. Dr. Robert Anderson, the biographer of the British poets, wrote a life of Smollett.

John Home, the author of *The Tragedy of Douglas*, was born in Leith in 1722. He was educated for the Church, and succeeded Blair as minister of Athelstaneford. In the end of the year 1756 *Douglas* was first acted in Edinburgh, and proved a complete success, as it held the stage for many nights, and was attended by all the literary notabilities and some of the judges. The citizens were greatly elated that a Scotsman had written a first-rate tragedy, and that its merit was first submitted to their judgment; though there were a few opposers, who pretended to superior taste in literature, and endeavoured to cry down the performance in pamphlets and ballads, while one section of the clergy were unanimous against it. But *The Tragedy of Douglas* maintained its hold on the stage for more than fifty years, and still ranks amongst the better class of the productions of the modern English drama.

A party of the clergy, and especially Home's own presbytery, raised a clamour, and were preparing a prosecution against him, when he resigned his charge, and withdrew from the Church.[6] Lord Bute, however, rewarded Home with the sinecure office of conservator of Scots privileges at Campvere; and when George III. ascended the throne he received a pension of £300 per annum. He wrote several other tragedies which were soon forgotten; yet, with an income of about £600 a year, he lived in easy and happy circumstances. In the later years of his life, he wrote a *History of the Rising of 1745*, published in 1802; it is not, however, of much historical value. He survived all the literary associates and companions of his youth, and having attained the great age of eighty-six, died in 1808.

William Falconer, the son of a barber, was born at Edinburgh in 1732. He went early to sea, and before he was eighteen years of age, had attained the rank of second mate in the *Britannia*, which, when trading between Venice and Alexandria, was wrecked off Cape Colonna. Falconer and other two men alone escaped. It was his experiences on this occasion which formed the subject of his poem, "The Shipwreck." This poem appeared in 1762, and was very successful. In 1764 a second edition was issued, enlarged by

[6] *Autobiography of the Rev. Alex. Carlyle*, pp. 310-325.

Richard Gall, while working as a painter in Edinburgh, wrote several songs which became popular. One entitled, "My only Jo and Dearie O," and another, "Farewell to Ayrshire," has often been printed as a composition of Burns. Gall was born in 1776, and died in 1800.

nine hundred new lines; and a third was published in 1769, with two hundred lines added to the poem, and many alterations of the text. But his literary activity was closed by an untimely death. In 1769 he sailed on board a vessel bound for India, which reached the Cape of Good Hope in December, but was never after heard of. Since Falconer's death, several editions of his poem has been published.

Although "The Shipwreck" is very unequal, it has the merit of being exceedingly animated and interesting. As he wrote of what he actually saw and felt, the poem has the characteristic attraction of truth and reality.

A great stir was raised in literary circles in Scotland, especially in Edinburgh, by the publication of Macpherson's translation of Ossian's poems. James Macpherson was born at Kingussie, in Inverness-shire, in 1738. He was intended for the Church, and was educated at the University of Aberdeen. In 1760 he published a small volume entitled *Fragments of Ancient Poetry Translated from the Gaelic*, which attracted much attention. His friends encouraged him to make a tour in the Highlands to collect other pieces. As the result of his journey, he published, in 1762, *Fingal*, an ancient epic poem, in six books; and in 1763, *Temora*, another epic poem in eight books. The sale of these poems was great, and it is reported that Macpherson realised a sum of £1200 from them. His patrons, Mr. Home, Dr. Blair, Dr. Alexander Carlyle, and others, were much pleased and rejoiced. But many doubted, and some disbelieved that the poems were genuine; and then a vehement controversy arose on the subject of their authenticity, which raged long. Meanwhile, Macpherson fixed his residence in London, and became a popular pamphleteer in support of the Government of the day; and finally he entered parliament as the representative of the Borough of Camelford. Having realised a large fortune, in 1789 he purchased the estate of Raitts, in his native parish, built upon it a fine residence, in the style of an Italian villa, in which he died on the 17th of February, 1796. In accordance with his own explicit directions his remains were interred in Westminster Abbey, while a monument was erected to his memory on his own estate, which may be seen by the roadside near Kingussie.

That Macpherson was gifted with remarkable abilities, his career amply demonstrates; but considering his extreme vanity, his veracity is a totally different question. There is no doubt that he col-

lected a certain quantity of the traditional pieces of verse and fragments of ancient Gaelic poetry, which was then current among the Celtic people of the Highlands. The only question is, how much Macpherson himself added to complete the poems which he published. When the circumstances connected with the subject are fairly weighed, the question is not a very difficult one; and the obvious conclusion is, that he drew from his own imaginative and elaborative faculties all that was needed to give the poems the completed and finished form in which they appeared in his published translations. The original material of these poems was probably not very bulky, and perhaps more than the half of the two published epic poems, should be assigned to the genius of Macpherson.

Dr. James Beattie, already mentioned, was a poet as well as a writer and teacher of moral philosophy. In 1760, he published a collection of his poems, with some translations, which was reprinted in 1766, without the translations. The first part of his *Minstrel* appeared in 1771, the second in 1774. The volume met with a flattering reception, while honours flowed in on the author. He visited London, and was admitted to its brilliant circles; he also had an interview with the king and queen, and received a pension of £200 per annum; while the University of Oxford conferred upon him the degree of LL.D.

Beattie's fame now chiefly rests on *The Minstrel*, which is a didactic poem, in the Spenserian stanza, intended to "trace the progress of a poetical genius, born in a rude age, from the first dawning of fancy and reason till that period at which he may be supposed capable of appearing in the world as a minstrel." The poem, though left unfinished, is well worked out so far as it goes, and there are many fine passages in it. He had good descriptive powers, and the command of appropriate and expressive language, but he was deficient in grasp and range of thought. The following lines describing a morning landscape is a fair specimen of his poetry:

"Even now his eyes with smiles of rapture glow,
As on he wanders through the scenes of morn,
Where the fresh flowers in living lustre blow,
Where thousand pearls the dewy lawns adorn,
A thousand notes of joy in every breeze are borne.
But who the melodies of morn can tell?
The wild brook babbling down the mountain side;
The lowing herd; the sheepfold's simple bell;
The pipe of early shepherd dim descried

In the lone valley ; echoing far and wide
The clamorous horn along the cliffs above ;
The hollow murmur of the ocean tide ;
The hum of bees, the linnet's lay of love,
And the full choir that wakes the universal grove.
The cottage curs at early pilgrim bark ;
Crowned with her pail the tripping milkmaid sings :
The whistling ploughman stalks a field ; and hark !
Down the rough slope the ponderous waggon rings ;
Through rustling corn the hare astonished springs ;
Slow tolls the village clock the drowsy hour ;
The partridge bursts away on whirring wings ;
Deep mourns the turtle in sequestered bower,
And shrill lark carols clear from her aerial tower."

John Logan[7] was a native of the parish of Fala, in Midlothian, the son of a small farmer. He was educated for the Church, and in 1773 he was appointed one of the ministers of South Leith. He delivered a course of lectures on the philosophy of history in Edinburgh, the substance of which was published in 1781. In 1782 he published his poems, and the following year he issued a tragedy entitled "Runnymede," founded on the signing of Magna Charta. But his congregation were displeased at this application of his powers, and unfortunately Logan himself had fallen into dissipated habits ; the result was that he resigned his charge and went to London, where he resided till his death.

When in London, Logan contributed papers to *The English Review*, and wrote a pamphlet on the charges against Warren Hastings—an able defence of the accused, and attack on his accusers, which led to the trial of Stockdale the printer, and to one of the most memorable of Erskine's speeches. Among Logan's MSS. were found some unfinished tragedies, thirty lectures on Roman History, and a collection of sermons, from which two volumes were selected and published by his executors. The best of Logan's poetical efforts are his "Visit to the Country in Autumn," and his ballad stanzas on the "Braes of Yarrow." In his lines on the death of a young lady, the following occurs :—

[7] Born in 1748 and died in 1788. In 1770 Logan edited the poems of Michael Bruce, an ingenious and persevering youth, who died in his twenty-second year. Bruce's poems were reprinted in 1784, and afterwards included in Anderson's edition of the poets. Among the best of Bruce's pieces is "Lochleven," a descriptive poem in blank verse. If his life had been spared, it is probable he would have taken a high rank among the national poets.

"What tragic tears bedew the eye!
What deaths we suffer ere we die!
Our broken friendships we deplore,
And loves of youth that are no more!
No after-friendship e'er can raise
The endearments of our early days,
And ne'er the heart such fondness prove,
As when it first began to love." Amen.

The genial Robert Fergusson was a native of Edinburgh,[8] a poet whose life was short. He has sometimes been called the poet of Scottish city-life. He was educated at the University of St. Andrews, where he spent four years; but it seems that he had failed to form a definite end in life, and unhappily he became a victim of dissipation. His chief characteristics as a poet are—a keen sense of the ludicrous, a strong vein of original comic humour, a talent for describing the peculiarities of local manners, and a copious command of expressive language. He wrote poems both in English and Scotch; his Scotch pieces, however, are most esteemed. He was a genius, but his career was short, having died in his twenty-third year. In 1773 he collected and published his poems in a volume, which was well received. Some of the most notable of his pieces are "The King's Birthday," "The Sitting of the Session," "Guid Braid Claith," and "Auld Reekie," that is, Edinburgh.

Burns avowedly had an excessive admiration for the writings of Fergusson, and even preferred them to those of Ramsay. Perhaps a few lines from Fergusson's effusion entitled "Cauler Water" will indicate why it was that Burns admired him so much:—

"When father Adie first pat spade in
The bonny yard o' ancient Eden,
His aumrie had nae liquor laid in
To fire his mou,
Nor did he thole his wife's upbraidin'
For bein' fou.

A cauler burn o' siller sheen
Ran cannily out-ower the green,
And when our gutcher's drouth had been
To bide right sair,
He loutit down and drank bedeen
A dainty skair.

[8] Born in 1751, and died in 1774.

His bairns had a' before the flood
A langer tack o' flesh and blood,
And on mair pithy shanks they stood
Than Noah's line,
Wha still hae been a feckless brood
Wi' drinkin' wine.

The fuddlin' bardies now-a-days,
Rin maukin-mad in Bacchus' praise,
And limp and stoiter through their lays
Anacreontic,
While each his sea of wine displays
As big's the Pontic.

. . . . . .

But we'll hae nae sic clitter-clatter;
And, briefly to expound the matter,
It shall be ca'd guid cauler water;
Than whilk, I trow,
Few drugs in doctors' shops are better
For me or you.

. . . . . .

What makes Auld Reekie's dames sae fair?
It canna be the halesome air;
But cauler burn, beyond compare
The best o' ony,
That gars them a' sic graces skair,
And blink sae bonny.

On May-day, in a fairy ring,
We've seen them round St. Anthon's spring,[9]
Frae grass the cauler dew-draps wring
To weet their een,
And water, clear as crystal spring,
To synd them clean."

A student of Burns will hardly fail to observe in the above, and in many other of Fergusson's verses, certain turns of thought, modes of feeling and strains, common to both poets, although the latter had not the volume of passion nor the intellectual power of the former.

So much has been written about Burns, and his poems and songs are so well known among all classes throughout Scotland, that any lengthened account of them is unnecessary; but something may be said, however, on the influence which his writings have had on the

[9] A well on Arthur's Seat, near Edinburgh, to which it is still the practice of young Edinburgh maidens to resort on May-day.

imaginative literature of the nation, and of his general influence upon the people.

Burns was a great reader, and an assiduous student. He was familiar with the history of his native country and the heroic national struggles. He was well acquainted with the early ballads, songs, and poetry of Scotland, and also the poetical writings of his immediate predecessors and contemporaries. He says himself :—"I have paid more attention to every description of Scots songs than perhaps any body living has done." His "Remarks on Scottish Songs and Ballads" afford evidence that this statement was well founded. His knowledge, however, was not limited to songs and poetry; he knew a good deal about general literature, and even philosophy. In some fragments of his Common Place Book he says : "I entirely agree with that judicious philosopher, Mr. Smith, in his excellent *Theory of Moral Sentiments*, that remorse is the most painful sentiment that can embitter the human bosom. Any ordinary pitch of fortitude may bear up tolerably well under these calamities, in the procurement of which we ourselves have had no hand, but when our follies or crimes have made us miserable and wretched, to bear up with manly firmness, and at the same time have a proper penitential sense of our misconduct, is a glorious effort of self-command.

"I have often observed in the course of my experience of human life that every man, even the worst, has something good about him, though very often nothing else than a happy temperament of constitution inclined him to this or that virtue. For this reason, no man can say in what degree any other person besides himself can be, with strict justice, called wicked. Let any of the strictest for regularity among us examine impartially how many vices he has never been guilty of, not from any care or vigilance, but for want of opportunity or some accidental circumstance intervening; how many of the weaknesses of mankind he has escaped, because he was out of the line of such temptations; and what often, if not always, weighs more than all the rest, how much he is indebted to the world's good opinion, because the world does not know all. I say, any man who can thus think, will scan the failings, nay, the faults and crimes, of mankind around him with a brother's eye." This is pretty good philosophy.

"I have every possible reverence for the much talked of world beyond the grave, and I wish that what piety believes, and virtue deserves, may be all matter of fact.

"Strong pride of reasoning, with a little affectation of singularity, may mislead the best of hearts. I likewise, in the pride of despising old women's stories, ventured in 'the daring path Spinoza trod,' but experience of the weakness, not the strength, of human powers, made me glad to grasp at revealed religion."

He had a high ideal of the poet's functions, and says—"I glory in being a poet, and I want to be thought a wise man. . . Poets, of all mankind, feel most forcibly the powers of beauty. If they are really poets of nature's making, their feelings must be finer, and their taste more delicate, than those of most of the world. In the cheerful bloom of spring, or the pensive mildness of autumn, the grandeur of summer, or the hoary majesty of winter, the poet feels a charm unknown to the rest of his species. Even the sight of a fine flower, or the company of a fine woman (by far the fairest of God's works below), have sensations for the poetic heart that the herd of mankind are strangers to."

The first edition of Burns's poems appeared in the summer of 1786, and consisted of 600 copies, and several other authorised editions were published in his lifetime—one in 1787, another in 1793, with the addition of "Tam o' Shanter" and other pieces. Since his death, one hundred years ago, the number of editions of his works published amount to upwards of three hundred and forty.[10]

The influence of Burns on the imaginative literature of Scotland has been deep and abiding. Many Scotsmen have been so touched, moved, and stirred by his writings, as to arouse an irrepressible feeling within then to compose verse themselves; and to-day there are many in the humble walks of life who can write passable and even animated verse and song, and appreciate the highest works of the imaginative and elaborate faculties of the race. Burns has exercised much influence over the mind of the Scottish people by removing prejudice and superstition, fostering liberty and independence of

[10] When on a visit to Glasgow recently, the intelligent and amiable librarian of the Mitchell Library, Mr. Barrett, kindly showed me through every department of the establishment under his charge; and I was delighted to find that this Library possessed a special corner containing a most extensive and valuable collection of editions of the works of Burns, embracing upwards of a 1000 volumes, and comprises 343 separate editions of his works, in from one to eight volumes each. The citizens of Glasgow may well be proud of this special and memorable collection.

spirit, and greater freedom of thought. In regard to prejudice and superstition, the satirical and comic features of many of Burns' pieces have had a very beneficial effect upon the mind of the people. In conjunction with other influences, these have contributed greatly to enlighten the understanding, and thus enabled the people to banish from their minds a host of delusive and absurd fears.[11]

Touching liberty and independence, the writings of Burns are clear and emphatic. His own manly spirit of independence often shows itself in many forms in his poems and songs; and in this connection their influence upon the people have been considerable. Even politically his writings have had a beneficial influence in Scotland. "The Tree of Liberty," and that "a man is a man whatever his lot may be," with all the rights of humanity, were not written in vain. Thus the writings of Burns have contributed to the enlightenment of the national mind, by relieving it from a burden of obnoxious notions, slavish fears, and silly prejudices.[12]

[11] For instance, in such pieces as his "Address to the Deil," though he adopted the common superstitions of the people concerning the attributes of Satan, the elements of the ludicrous, the sly humour, and the veins of satire and irony which he introduced, have produced surprising changes in the notions of the people. He even expressed a wish for the salvation of the Deil himself :—

"But fare-you-well, auld Nickie-ben!
Oh! wad you tak' a thocht and men'!
Ye aiblins micht—I dinna ken—
Still hae a stake:
I'm wae to think upo' yon den,
Even for your sake."

[12] There are a number of what are usually called minor poets, but I can only notice a few of them.

Alexander Wilson was born in Paisley on the 6th of July, 1766. He is the author of a number of songs and poems, including a humorous ballad—"Watty and Meg." A small volume of his songs and poems was printed at Paisley in 1790. In 1794 he emigrated to America, where he assiduously prosecuted the study of ornithology, and gained distinction as an ornithologist. He is the author of an important work on this branch of science. He died in 1813 in America. Some years ago Wilson's verse and miscellaneous prose were published by Mr. Gardner in two volumes.

Hector Macneil was born in 1746, and died in 1818. He is the author of several productions in verse. In 1789, he published a legendary poem, "The Harp," and in 1795, his moral tale, "Scotland's Skaith:" the object of this tale was to describe in a vivid manner the evil effects of intemperance, and the idea is pretty well worked out.

Carolina Oliphant, Baroness Nairn, born in 1766, and died in 1845; she belonged to the Oliphants of Gask, and was much celebrated for her beauty,

Section II.

Poetry of the Nineteenth Century.

Robert Tannahill,[13] a lyrical poet of high distinction, was a native of Paisley. His education was limited: at an early age he was sent to the loom, and he continued to follow this occupation. He was a dutiful and kind son to his mother, full of the warmest filial piety.

The first edition of his poems and songs appeared in 1807; and the volume, consisting of 900 copies, was sold out in a few weeks. He afterwards contributed some songs to Mr. Thomson's *Select Melodies*, and interested himself in collecting Irish airs, of which he was exceedingly fond. Many of his own songs are very fine, rich, and original in sentiment and description. His diction is copious, appropriate, and expressive, and often touching and pathetic. His "Gloomy Winter's noo Awa'" may be taken as a fair specimen of his songs:—

"Gloomy winter's noo awa',
Saft the wastlin breezes blaw:
'Mang the birks o' Stanley-shaw
The mavis sings fu' cheerie O.

Sweet the craw-flower's early bell
Decks Gleniffer's dewy dell,
Blooming like thy bonny sel',
My young, my artless dearie O.

Come, my lassie, let us stray
O'er Glenkilloch's sunny brae,
Blithely spend the gowden day
'Midst joys that never wearie O.

talents, and worth. She is the authoress of the two fine Scottish songs, "The Land o' the Leal," and "The Laird o' Cockpen."

John Lowe, born in 1750, and died in 1798, is the author of the touching lyric, "Mary's Dream," beginning—

The moon had climbed the highest hill
Which rises o'er the source o' Dee,
And from the eastern summit shed
Her silver light on tower and tree."

[13] Born in 1774; died in 1810. James Montgomery, though born at Irvine, in Ayrshire, in 1771, can hardly be called a Scottish poet, for he was educated in England, and afterwards lived there till his death in 1854. He is chiefly distinguished as a religious poet; but he was a man of marked ability and culture, and is the author of a large quantity of poetry. A collected edition of his works, in four volumes, was issued in 1841.

Towering o'er the Newton woods,
Lavrocks fan the snaw-white clouds ;
Siller saughs, wi' downie buds,
Adorn the banks sae brierie O.

Round the sylvan fairy nooks
Feathery breckans fringe the rocks,
'Neath the brae the burnie jouks,
And ilka thing is cheerie O

Trees may bud, and birds may sing,
Flowers may bloom, and verdure spring,
Joy to me they canna bring,
Unless wi' thee, my dearie O."

John Mayne was a native of Dumfries,[14] and was trained to the printing business. When an apprentice, in 1777, he published the germ of his "Siller Gun," in twelve stanzas. The subject of the poem is an old custom in Dumfries, called "Shooting for the Siller Gun ;" the gun itself is a small silver tube presented by James VI. to the incorporated trades as a prize to the best marksman. He continued to enlarge and improve the poem till the year of his death, when it was reprinted for the fourth time, and extended to five cantos. He is the author of some other pieces, including his ballad of "Logan Braes," which begins thus :—

" By Logan's streams, that rin sae deep,
Fu' aft wi' glee I've herded sheep :
Herded sheep and gathered slaes,
Wi' my dear lad on Logan braes.

But wae's my heart, thae days are gane,
And I wi' grief may herd alane,
While my dear lad maun face his faes,
Far, far frae me and Logan braes."

John Leyden was born at Denholm, (1775), in Roxburghshire, and the centenary of his birth was celebrated at Edinburgh, 1785. He was an oriental scholar of some note, as well as a poet. He was a persevering youth, and early manifested a taste for literature. He contributed to Lewis' *Tales of Wonder*, and to Scott's *Minstrelsy of the Scottish Border*. In 1802, he published his poem entitled, "The Scenes of Infancy," and left Scotland for India. His career there was successful and honourable, but it was cut short by his death from fever in 1811. His poetical remains were published in 1819,

[14] Born in 1761 ; died in 1836.

with a memoir of his life by the Rev. James Morton; while Sir Walter Scott and Sir James Malcolm both honoured his memory with notices of his life and genius. His longest poem is the one already mentioned, which is devoted to a description of his own native vale of Teviot. His poetry is smooth and flowing, but rather lacking in strength. The following is from the opening of his ballad called "The Mermaid":—

"On Jura's heath how sweetly swells
The murmurs of the mountain bee!
How softly mourns the writhed shell
Of Jura's shore, its parent sea!
But softer floating o'er the deep,
The mermaid's sweet sea-soothing lay,
That charmed the dancing waves to sleep,
Before the bark of Colonsay."

Thomas Campbell[15] was a native of Glasgow, the son of a merchant in the city. He was educated at the University of Glasgow, and began early to manifest a taste for poetry. His *Pleasures of Hope* appeared in 1799, the copyright of which was sold for £60; but it is said that the publishers for some years gave him £50 on every new edition of two thousand copies. The poem was immediately successful. After the publication of the first edition, he added 154 lines to the poem. It attracted all classes of readers by its varied and fine melody, polished style, and the strain of generous sentiment pervading it. He touched on many points and incidents of deep human interest; and in depicting the dismal horrors of war, and the infamous partition of Poland, he rose to a high pitch of inspiration, as in these lines:—

"Oh, bloodiest picture in the book of time!
Sarmatia fell, unwept, without a crime;
Found not a generons friend, a pitying foe,
Strength in her arms, nor mercy in her woe!
Dropped from her nerveless grasp the shattered spear,
Closed her bright eye and curbed her high career:
Hope for a season bade the world farewell,
And freedom shrieked as Kosciusko fell!
The sun went down, nor ceased the carnage there;
Tumultuous murder shook the midnight air—
On Prague's proud arch the fires of ruin glow,
His blood-dyed waters murmuring far below.
The storm prevails, the rampart yields a way,
Bursts the wild cry of horror and dismay!

[15] Born in 1777; died in 1844.

Hark ! as the smouldering piles with thunder fall,
A thousand shrieks for hopeless mercy call !
Earth shook, red meteors flashed along the sky,
And conscious nature shuddered at the cry ! "

This poem was a wonderful effort for a youth of twenty-one years. But the chief source of its inspiration was not British, as the lines just quoted show traces of ancient Grecian heat, and especially Homeric fire.

Campbell's minor poems and songs are universally admired. Such as his "Exile of Erin," "Lochiel's Warning," "The Battle of Hohenlinden," and the songs, "Ye Mariners of England," and the "Battle of the Baltic," are popular favourites.

In 1809, his poem, *Gertrude of Wyoming, a Pennsylvanian Tale*, appeared; but his subsequent literary efforts added little to his fame as a poet.[16] The finest of his later pieces is one entitled "The Last Man," which may be ranked among his best compositions ; the following lines are from this poem :—

"All worldly shapes shall melt in gloom—
The sun himself must die,
Before this mortal shall assume
Its immortality !
I saw a vision in my sleep,
That gave my spirit strength to sweep
Adown the gulf of time !
I saw the last of human mould
That shall creation's death behold
As Adam saw her prime !
The sun's eye had a sickly glare,
The earth with age was worn ;
The skeletons of nations were
Around that lonely man ;
Some had expired in fight—the brands
Still rusted in their bony hands—
In plague and famine some :
Earth's cities had no sound nor tread ;
And ships were drifting with the dead
To shores where all were dumb ! "

[16] Campbell contributed several papers to the *Edinburgh Encyclopædia*, and also wrote the *Annals of Great Britain from the Accession of George III. to the Peace of Amiens*, in three volumes. In 1806, through the influence of Fox, he received a pension. He delivered a course of lectures on poetry at the Surrey Institution, in 1820; and in 1827, he was elected Lord Rector of the University of Glasgow. In 1849, a selection from his correspondence and an account of his life was published by Dr. Beattie.

The whole of the poem shows high conceptive power and elevated sentiment. I shall quote a few lines from his piece—"A Thought suggested by the New Year":—

"The more we live, more brief appears
Our life's succeeding stages:
A day to childhood seems a year,
And years to passing ages.
The gladsome current of our youth,
Ere passion yet disorders,
Steals, lingering like a river smooth
Along its grassy borders.
But as the careworn cheek grows wan,
And sorrow's shafts fly thicker,
Ye stars that measure life to man,
Why seem your courses quicker?
When joys have lost their bloom and breath,
And life itself is vapid,
Why, as we reach the falls of death,
See we the tide more rapid?"

His *Specimens of the British Poets, with biographical and critical notices*, which appeared in 1818, is a work of much value. The truth, justness, and beauty of his criticisms have been universally recognised, and some of them present elegant models of this branch of literature.

Sir Walter Scott[17] was not only a distinguished poet, but also a novelist of the first rank, and wrote on various other subjects. He studied law, and was called to the bar in 1792. He was a diligent reader, and acquired some knowledge of the German, French, Italian, and Spanish languages; but from his early years the bent of his mind was manifested in his fondness for ballads and romantic stories. In 1799 he was appointed sheriff of Selkirkshire. He had already begun to collect the materials for the ballad literature of the Border; and the result appeared in his *Minstrelsy of the Scottish Border*, two volumes of which were published in 1802, containing more than forty pieces never before published, along with a large quantity of prose illustration, in the form of introduction and notes. The following year, a third volume appeared, which contained some imitations of the old ballads by Scott himself and his friends. After performing other editorial work in the field of early rhyme, he made an independent effort, which appeared in 1805, under the title of *The Lay of the Last Minstrel.*

[17] Born in 1771; died 1832.

This poem at once placed him in the front rank of living poets. His chief gifts and powers were admirably displayed in it. Its success was great and unexampled in Scotland; and, for a time, Scott was worshipped as the poet of the day. But, unfortunately, his natural ambition to found a family to vie with the ancient Border names seems to have developed into an over-ruling passion, which obscured his sagacity and good sense, and thus he was led into doubtful projects, and financial responsibilities which proved ruinous.

In 1808, his remarkable poem of *Marmion* was published; and the same year he published his edition of Dryden. Scott was now fairly launched as a poet, and volumes from his pen flowed rapidly. In 1810, *The Lady of the Lake* appeared, which was exceedingly popular. The following year, *The Vision of Don Roderick* was published; in 1713, *Rokeby* and *The Bride of Triermain*; in 1814, *The Lord of the Isles*; in 1815, *The Field of Waterloo*; and in 1817, *Harold the Dauntless*. By this time, it had become manifest that his later poems were inferior to his earlier ones, while the star of Byron was rising, and the readers of poetry were turning to the new worship. No one with any title to give an opinion on the point would venture to place Scott upon a par with Byron. Scott had merits of his own, within a limited circle of poetic conception and execution he is a real poet. For emotional power, passion, and poetic fire, as well as intellectual qualities, Byron stands above Scott. In short, Byron is, perhaps, the greatest poet that has appeared in Britain during the past two centuries. He has the true glow of poetic fire, which in intensity of emotion, passion, and intellectual qualities, warms his poetry to a high pitch.

Scott himself was no doubt well aware of this, and turned his attention to fiction, in which his genius attained its highest development. *The Lady of the Lake* was the most popular of his poems; in a few months twenty thousand copies of it were sold. His poems, though still read, are not so popular as his novels. It is unnecessary to dwell on his poetry, and I shall only quote a few lines from *Marmion*, which is mainly a tale of Flodden field. The following refers to the close of the battle :—

> "Tweed's echoes heard the ceaseless plash,
> While many a broken band,
> Disordered through her current dash,
> To gain the Scottish land;
> To town and tower, to down and dale,

To tell red Flodden's dismal tale,
And raise the universal wail.
Tradition, legend, tune, and song,
Shall many an age that wail prolong;
Still from the sire the son shall hear
Of the stern strife and carnage drear
Of Flodden's fatal field,
Where shivered was fair Scotland's spear,
And broken was her shield."

The next poet was a contemporary and friend of Scott's. James Hogg,[18] a native of the vale of Ettrick, in Selkirkshire, was descended from a family of shepherds, and is best known by his poetic name of "The Ettrick Shepherd." He was sent to service when a child, and received but little education: however, his mother was in the habit of reciting old legends and ballads, and many of the evenings in his early years were occupied in listening eagerly to her. He also became an earnest reader of poetry and romances, and devoured the contents of a circulating library in Peebles. He assisted Sir Walter Scott in the collection of old ballads for the *Minstrelsy of the Border*.

At first he tried his hand in song writing, and in 1801, he published a small volume of pieces. He soon acquired a felicity of imitating the style of the old ballads; and under the title of *The Mountain Bard*, he published another volume of songs and poems, in 1807. In 1810, he published a collection of songs called *The Forest Minstrel;* and in 1813, his legendary poem, entitled *The Queen's Wake*, appeared. This work consists of a number of tales and ballads supposed to be sung to Queen Mary of Scots by the native bards of Scotland assembled at a royal wake at Holyrood, so that the fair Queen might prove

"The wondrous powers of Scottish song."

The work was well conceived, and its elaboration so complete that Hogg was soon placed in the front rank of Scottish poets. At the end of this poem, he alluded to his friend Scott, and adverts to an advice which Sir Walter had once given him, to abstain from his worship of poetry:—

"The land was charmed to list his lays;
It knew the harp of ancient days.
The border chiefs that long had been
In sepulchres unhearsed and green,

[18] Born in 1771, and died in 1836.

Passed from their mouldy vaults away
In armour red and stern array.
And by their moonlit halls were seen
In visor, helm, and habergeon.
Even fairies sought our land again
So powerful was the magic strain.
Blest be his generous heart for aye!
He told me where the relic lay;
Pointed my way with ready will
Afar on Ettrick's wildest hill;
Watched my first notes with curious eye,
And wondered at my minstrelsy;
He little weened a parent's tongue
Such strains had o'er my cradle sung.
But when to native feelings true,
I struck upon a chord was new;
When by myself I 'gan to play,
He tried to wile my harp away.
Just when her notes began with skill,
To sound beneath the southern hill,
And twine around my bosom's core,
How could we part for evermore?
'Twas kindness all—I cannot blame—
For bootless is the minstrel flame:
But sure a bard might well have known
Another's feelings by his own!"

Subsequently, Hogg wrote many other works—*Mador of the Moor*, a poem in the Spenserian stanza; *The Pilgrims of the Sun*, in blank verse; *The Poetic Mirror; Queen Hynde; Dramatic Tales*, etc. He also produced several novels—*Winter Evening Tales; The Three Perils of Man; The Three Perils of Woman*, etc., and *Jacobite Relics*, referred to in a preceding volume.

He was a strong and versatile man, a veritable genius. His imaginative and reproductive faculties were of a high order, his sympathies were wide and catholic, and his power of realisation has rarely been excelled. What he wanted was culture, and more art. There are passages in his writings which, for lofty imaginative representation, few poets or painters have ever surpassed. It is true, that both his poetry and prose is unequal in composition; yet few can read them without being impressed with the poet's inspiration. The following is from his verses to the Comet of 1811:—

"How lovely is this wildered scene,
As twilight from her vaults so blue,

Steals soft o'er Yarrow's mountains green,
To sleep embalmed in midnight dew!
All hail, ye hills, whose towering height,
Like shadows, scoops the yielding sky!
And thou, mysterious guest of night,
Dread traveller of immensity!

Stranger of heaven! I bid thee hail!
Shred from the pall of glory riven,
That flashest in celestial gale,
Broad pennon of the King of heaven!
Art thou the flag of woe and death,
From angel's ensign staff unfurled?
Art thou the standard of His wrath.
Waved o'er a sordid, sinful world?

. . . . . .

Whate'er portends thy front of fire,
Thy streaming locks so lovely pale—
Or peace to man, or judgment dire,
Stranger of heaven, I bid thee hail!

. . . . . .

O! on thy rapid prow to glide!
To sail the boundless skies with thee,
And plough the twinkling stars aside,
Like foam-bells on a tranquil sea!
To brush the embers from the sun,
The icicles from off the pole;
Then far to other systems run,
Where other moons and planets roll!"

His lyric, "The Skylark," has often been quoted as one of the best of his short pieces; and his song, "When the Kye comes Hame," is also fine. His life was recently published by his daughter, Mrs. Garden.

Sir Alexander Boswell,[19] the eldest son of Johnson's biographer, was the author of some amusing songs which were very popular, such as "Jenny's Bawbee," "Jenny Dang the Weaver," etc. This gentle-

[19] He was born in 1775. "When politics ran high, he unfortunately wrote some personal satires, for one of which he received a challenge from Mr. Stuart of Dunearn. The parties met at Auchtertool in Fifeshire. Conscious of his error, Sir Alexander resolved not to fire at his opponent, but Mr. Stuart's shot took effect, and the unfortunate baronet fell. He died from the wound on the following day, the 26th of March, 1822. He had been elevated to the baronetcy only the previous year. His brother, James, was an accomplished scholar and student of early literature, and edited Malone's edition of Shakespeare, 21 vols., in 1821; but he died in 1822, and Sir Alexander had just returned from the funeral of his brother when he engaged in the fatal duel."

man was a warm admirer of early Scottish literature, and reprinted several works at his own private printing-press at Auchinleck. One of his songs, entitled "Good-night, and joy be wi' ye a'," is supposed to proceed from the mouth of an aged chieftain, thus:—

"Good-night, and joy be wi' ye a';
Your harmless mirth has charmed my heart;
May life's fell blasts out owre ye blaw,
In sorrow may ye never part.
My spirit lives, but strength is gone;
The mountain fires now blaze in vain;
Remember, sons, the deeds I've done,
And in your deeds I'll live again!
. . . . . .
The auld will speak, the young maun hear;
Be cantie, but be good and leal;
Your ain ills aye hae heart to bear,
Anither's aye hae heart to feel.
So, ere I set, I'll see you shine,
I'll see you triumph ere I fa';
My parting breath shall boast you mine—
Good-night, and joy be wi' you a'."

Allan Cunningham,[20] a native of Blackwood, in Dumfriesshire, was a man of varied accomplishments and marked abilities, combined with persistent application. In his early days he had few advantages, and was sent to learn the trade of a mason, but in 1810 he removed to London and engaged in newspaper work. In 1814 he entered the establishment of Sir Francis Chantrey, the eminent sculptor, as superintendent of the works, and remained in this situation until his death.

He was an exceedingly industrious writer. He began at an early age to contribute poetical effusions and songs to the periodical press, and attained a facility of imitating the strains of the old Scottish ballads. In 1822 he published a dramatic poem entitled *Sir Marmaduke Maxwell*, founded on Border tradition and superstition, and

[20] Born in 1784, died in 1842. William Tennant, a native of Anstruther, originally a clerk in a mercantile establishment, studied ancient and modern literature, and taught himself Hebrew, is the author of the mock-heroic poem, "Anster Fair," which appeared in 1812, and soon became popular. The subject of the poem was the marriage of Maggie Lauder. After the appearance of this remarkable production, Tennant obtained an appointment as a schoolmaster, and finally he was appointed Professor of Oriental Languages in St. Mary's College, St. Andrews. He was the author of several other poems on local subjects. He died in 1848.

afterwards two volumes of traditional tales, and three novels drawn from similar sources. In 1832 his rustic epic, *The Maid of Elvar*, in twelve parts, appeared. He edited a well-known collection of *Scottish Songs* in four volumes; and an edition of Burns in eight volumes, to which he prefixed a valuable life of the poet. Cunningham contributed to Murray's "Family Library" a series of *Lives of Eminent British Painters, Sculptors, and Architects*, which extended to six volumes. It is an interesting and very useful work. His last work was a *Life of Sir David Wilkie* in three volumes, which he completed a few days before his death.

All Cunningham's literary work was executed in his spare hours, in the intervals from his regular occupation. His taste and attainments in the fine arts were considerable, and his art criticisms are candid and able. His prose style is remarkable for its freshness, energy, and ease, and in some of his songs there is warm emotion and real pathos. The two following stanzas are from his piece called "The Poet's Bridal-day Song":—

"Oh! my love's like the steadfast sun,
Or streams that deepen as they run;
Nor hoary hairs, nor forty years,
Nor moments between sighs and tears—
Nor nights of thought, nor days of pain,
Nor dreams of glory dreamt in vain—
Nor mirth, nor sweetest song which flows
To sober joy and soften woes,
Can make my heart or fancy flee
One moment, my sweet wife, from thee.

. . . . . .

At times there come, as come there ought,
Grave moment of sedater thought—
When fortune frowns, nor lends on night
One gleam of her inconstant light;
And Hope, that decks the peasant's bower,
Shines like the rainbow through the shower.
O, then I see, while seated nigh,
A mother's heart shine in thine eye;
And proud resolve and purpose meek,
Speak of thee more than words can speak:
I think thee, wedded wife of mine,
The best of all that's not divine."

William Motherwell [21] was a native of Glasgow, and early manifested a taste for poetry and song. He attained a thorough know-

[21] Born in 1797 and died in 1835.

ledge of the early history of Scottish literature. Reference was made in a preceding volume to the admirable historical introduction to his *Minstrelsy, Ancient and Modern.* In 1832 he collected and published his own poems in one volume. Some of his pieces are very touching, and the following short one may be taken as a specimen:—

"Mournfully! oh, mournfully
This midnight wind doth sigh,
Like some sweet plaintive melody
Of ages long gone by.
It speaks a tale of other years—
Of hopes that bloomed to die—
Of sunny smiles that set in tears,
And loves that mouldering lie!
Mournfully! oh, mournfully
This midnight wind doth moan;
It stirs some chord of memory
In each dull heavy tone.
The voices of the much-loved dead
Seem floating thereupon—
All, all my fond heart cherished
Ere death had made it lone.
Mournfully! oh, mournfully
This midnight wind doth swell,
With its quaint pensive minstrelsy,
Hope's passionate farewell,
To the dreamy joys of early years,
Ere yet grief's canker fell
On the heart's bloom—ay, well may tears
Start at that parting knell!"

William E. Aytoun [22] was born in Edinburgh, educated in the University there and in Germany, and having studied law, he was called to the bar in 1840. In 1845 he was elected to the chair of rhetoric in the University of Edinburgh, and in 1852 he was appointed Sheriff of Orkney.

Mr. Aytoun is the author of *Lays of the Scottish Cavaliers*, which appeared in 1849. These range from the battle of Flodden to the extinction of the Jacobite cause at Culloden, and are pervaded by a warm spirit, interspersed with scenes of pathos and mournful regret. In 1858 he published a collated edition of the *Old Scottish Ballads* in two volumes, which was noticed in a preceding volume.[23] He also attained distinction by his satirical and humorous compositions; his

[22] 1813, and died in 1865.

[23] Mackintosh's *History of Civil. Scot.*, Vol. I., p. 446.

tales and sketches, which appeared in *Blackwood's Magazine*, are vigorous and amusing.

Alexander Smith was born at Kilmarnock in 1830, but he passed his early life as a designer in a Paisley factory. His first volume of verse appeared in 1853, and the chief poem in it was "A Life Drama," a series of thirteen dramatic scenes. Afterwards he was appointed to the office of secretary to the University of Edinburgh, and continued his literary efforts. He contributed prose articles to periodicals, and, in 1857, he published another volume called *City Poems*. In 1861, his *Edwin Deira* appeared. But his health began to fail, and he died in 1867.

Smith had a vein of fervid poetic feeling, and his imaginative faculty was pretty keen, but in chaste poetic elaboration he was not

1. Robert Nicoll was born at Auchtergaven, Perthshire, in 1814, and cultivated literature in the face of many difficulties and discouragements, but his severe struggles probably shortened his life; he died in the twenty-fourth year of his age. His poems consist of short pieces and songs, which display a command of happy imagery and fancy.

2. Robert Gilfillan was born at Dunfermline in 1798, and died in 1850. His poems and songs have passed through several editions, and some of his songs have been set to music. His pieces are marked by warm and kindly feelings, and one called "The Exile's Song" is very fine and touching.

3. William Thom, commonly called "The Inverurie Poet," was born in Aberdeen in 1789, and died in 1848. He was a weaver, and followed this trade for many years. In 1844 he published a volume of *Rhymes and Recollections*. He subsequently visited London, and was warmly patronised by Scotsmen there and others. Thom, within his own range of ideas, was a real poet, and some of his pieces are very fine, sweet, pathetic, smooth, and flowing in versification.

4. David Gray was born at Merkland, near Kirkintilloch, in 1838, a son of humble parents, who intended him for the Church. He studied for four sessions in the University of Glasgow, and supported himself by teaching. He was passionately fond of poetry, and wrote many verses, some of which had appeared in the *Glasgow Citizen*. In his twenty-second year, this warm-hearted youth went to London to push his fortune; but he was soon attacked by consumption, and naturally longed to return to his father's house, and he came back to Merkland. There he worked hopefully at his poems, but his strength was fast ebbing away. He ardently desired to see his poems in print, and they were sent to the press. One page was immediately set up, and the dying poet had the ineffable gratification of seeing and reading it on the day before his death. The dying poet then exclaimed that "he could now depart tranquilly into his eternal rest." In 1865, a monument was erected to his memory in Kirkintilloch. His chief poem is called "The Luggie," but he composed a number of sonnets, which have many touching features both in feeling and expression. His genius was rich though immature.

strong. The greater part of his poetry is immature, overloaded with imagery and ornament—defects which, if his life had been spared, he might have overcome. On the other hand, his prose writings are better than his poetry. His short papers and essays, "Dreamthorp," "A Summer in Skye," and some literary remains published after his death, are written in an easy, pleasing, and admirable style.

Dr. Charles Mackay was born in Perth in 1814. He united political sympathies and aspirations with lyrical poetry, and some of his songs have long been familiar to the people of this country and America. His first poems were published in 1834, in a small volume. Soon after he became connected with the London press—*The Morning Chronicle*, a daily journal. In 1840, his poem called *The Hope of the World* appeared; and in 1842, *The Salamandrine*, one of the most finished of his works. In 1845, his *Legends of the Isles* was published; *Voices from the Crowd*, 1845; *Voices from the Mountains*, 1847; *Town Lyrics*, 1848; *The Spirit of Nature*, 1850; *The Lump of Gold*, 1856; *Songs for Music*, 1857; *Under Green Leaves*, 1858. He is also the author of a number of prose works, among which may be mentioned, *The History of London from its Foundation by the Romans to the Accession of Queen Victoria*, published in 1838; *Memoirs of Extraordinary Public Delusions*, in three volumes, 1841; *A History of the Mormons*, 1851; *Life and Liberty in America*, 1859, in two volumes; *The Gaelic and Celtic Etymology of Western Europe*, 1877; and other works. The following lines are from the opening of his song, "Tubal Cain":—

"Old Tubal Cain was a man of might
In the days when earth was young;
By the fierce red light of his furnace bright
The strokes of his hammer rung;
And he lifted high his brawny hand
On the iron glowing clear,
Till the sparks rushed out in scarlet showers,
As he fashoned the sword and spear.
And he sang: Hurra for my handiwork!
Hurra for the spear and sword!
Hurra for the hand that shall wield them well,
For he shall be king and lord!"

Alexander G. Murdoch was born in Glasgow in April, 1843. He is the author of many poems and songs of much merit. He had a wide command of expressive language, and some of his poems roll in very powerful strains. His *Humorous Readings* were published in 1888-89; he also wrote several interesting tales. He died at Glasgow on the 13th of February, 1891.

Lewis Morrison-Grant was born on the 9th of December, 1872, at a cottage in the vicinity of Loch Park, in the parish of Botriphnie, Banffshire. He received the rudiments of education at the parish school and at the Public School of Keith, and entered the University of Aberdeen in 1890. After attending two sessions his health failed, and he was unable to attend his third session. His short life was remarkable. When a mere boy he commenced to write verse, and his passion for this kind of writing became very strong. In the spring of 1892 his *Protomantis and Other Poems* was published in a volume of three hundred and nine pages, containing four pretty long poems, and one hundred and thirty-two shorter ones, which touch on a wide variety of subjects. His poems are of unequal merit, and in general they lack concentrated thought and strength; yet, taking into account that they were all written before he was twenty years of age, and the circumstances in which he was placed, his volume of poems is an extraordinary effort. If his life had been longer spared, no doubt he would have produced more highly finished work. After a protracted illness he died at Goldenwells, near Keith, on the 29th of June, 1893.[24] The following lines are from his fine poem entitled "More Light":—

> "I wait for light, I wait for God
> To fall in living lines on thee,
> O Soul!—in thoughts on which bestowed
> Gleams some unveiling mystery.
> And light is that I seek alone,
> A light wherein all things shall seem
> Even as to God they all are known:
> Our human light is faint and dim."

Before passing from this branch, I may remark that though a number of poets have been noticed in the preceding pages, they only form a fraction of the Scottish Poets, for "The Poet's Corner" of the Mitchell Library in Glasgow contains upwards of 5336 volumes of Scottish poetry, embracing the writings of 2000 different authors. Even this collection, which I understand is the most complete in existence, may not contain specimens of all the Scottish rhymers and poets.[25]

[24] A very interesting account of him, under the title of *His Life, Letters, and Last Poems*, edited by Jessie A. Anderson, was published by Gardner in 1894.

[25] In connection with this, a volume appeared in 1887 entitled *The Bards of Bon-Accord*, by William Walker, Aberdeen, which is an important work of its

class. It covers the period from 1375 to 1860, and embraces notices of many poets and writers of rhyme—natives of Aberdeen and the neighbouring counties. In itself the work is exceedingly interesting. The notices of the various writers are very well executed—with taste, judgment, and sometimes keen and warm sympathy. The numerous quotations also show care and discrimination in their selection, while the author's comments exhibit much consideration, fairness, and good sense.

In an Appendix a Bibliography of the subject of the work is given which greatly enhances its value, especially to all those who take a lively interest in matters of this kind—a class gradually increasing in numbers with the advance of exhaustive historical inquiries and liberal culture. The work has also a very complete index, which the author has very skilfully arranged, "to serve a threefold purpose—biographical items being printed in small capitals—poems quoted, in italics –other matters, in ordinary type." Those who have had occasion to make literary inquiries will appreciate the value of an index of this character.

CHAPTER XLII.

Fiction of the Eighteenth and Nineteenth Centuries.

I HAVE already mentioned Smollett as a writer of history and verse, and the first fruit of his labour in the field of fiction was *Roderick Random*, which appeared in 1748. His other novels were published in the following years—*Peregrine Pickle* in 1751 ; *Ferdinand Count of Fathom*, 1754 ; *Sir Launcelot Greaves*, 1762 ; and *The Expedition of Humphry Clinker*, 1771.

Roderick Random is an exceedingly interesting work of fiction, and it was long popular. Its interest and attraction does not depend on the development of a well-conceived and elaborated plot, but on the inventive power, the native humour, and knowledge of the author. The turns in the fortune of the hero of the novel are many and varied, and scene follows scene with amazing rapidity, so the attention of the reader never flags ; but the morality of the novel is low, and some coarse passages occur in it.

The hero in *Peregrine Pickle* is an unprincipled character. The humorous and comic features of his characters are well worked out, and presented in an attractive and amusing form, and the interest of the novel is admirably maintained. *Ferdinand Count Fathom* is a sort of romance, in which the chief character is an unscrupulous rascal who sticks at nothing. *Humphry Clinker* is the best of his novels. It is pervaded by a manly tone of feeling, natural, caustic, and humorous observation, and fine discrimination of character. The descriptions of rural scenery, society, and manners are clear and fascinating. Smollett was gifted with a keen sense of the comic and ludicrous, which he deftly used, while touches of pathos also occur in his writings.

Henry Mackenzie was born in Edinburgh,[1] and educated at the High School and the University of his native city. He followed the profession of law, and mixed freely in the literary circles of the capital, which then rejoiced in the names of Hume, Robertson, Adam Smith, Fergusson, and others.

[1] In 1745 ; died in 1831.

It seems that Mackenzie had read and studied the writings of Sterne, but he is superior to him in taste and in delicacy of feeling. In 1771, Mackenzie published *The Man of Feeling*, which was followed by *The Man of the World*, and *Julia de Roubigne*. He is also the author of various sketches which appeared in the *Mirror* and *Lounger*, and of some dramatic pieces which were acted at Edinburgh.

There is no distinctly conceived plot developed to an issue in Mackenzie's novels, still there is much interesting reading in his productions. His humour is natural and pure; his style is elegant and expressive, natural and easy, but lacking in strength. He was amongst the first to denounce the system of slave-labour in the West Indies, in these words:—

"I have often been tempted to doubt whether there is not an error in the whole plan of negro-servitude; and whether whites or creoles born in the West Indies, or perhaps cattle, after the manner of European husbandry, would not do the business better and cheaper than the slaves do. The money which the latter cost at first, the sickness—often owing to despondency of mind—to which they are liable after their arrival, and the proportion that die in consequence of it, make the machine, if it may be so called, of a plantation extremely expensive in its operations. In the list of slaves belonging to a wealthy planter, it would astonish you to see the number unfit for service, pining under disease, a burden on their master. I am only talking as a merchant; but as a man—good heavens! when I think of the many thousands of my fellow-creatures groaning under servitude and misery! Great God! hast Thou peopled those regions of Thy world for the purpose of casting out their inhabitants to chains and torture? No, Thou gavest them a land teeming with good things, lightest up Thy sun to bring forth spontaneous plenty; but the refinements of man, ever at war with Thy works, have changed this scene of profusion and luxuriance into a theatre of rapine, of slavery, and of murder.

"Forgive the warmth of this apostrophe! Here it would not be understood; even my uncle, whose heart is far from a hard one, would smile at my romance, and tell me that these things must be so. Habit, the tyrant of nature and of reason, is deaf to the voice of either; and she stifles humanity and debases the species—for the master of slaves has seldom the soul of a man." These are worthy sentiments, well expressed.

Dr. John Moore [2] was a native of Stirling, the son of a minister in that town. He was educated at the University of Glasgow, and studied medicine and surgery under Mr. Gordon, who had a large practice. He afterwards entered into partnership with Gordon, and practised in Glasgow for a number of years. At different times during his life he lived on the Continent for eight or nine years, mostly in France, Switzerland, Germany, and Italy, which gave him many opportunities of observing varied forms of society on a large scale. Sir John Moore, the noble General who led the memorable retreat in Spain, and fell at the battle of Corunna, was the eldest son of Dr. Moore.[3]

Dr. Moore's novels are—(1) *Zeluco:* Various Views of Human Nature, taken from Life and Manners, Foreign and Domestic, which appeared in 1786; (2) *Edward:* Various Views of Human Nature, taken from Life and Manners, chiefly in England, 1796; and (3) *Mordaunt:* Sketches of Life, Character, and Manners, in various Countries, including the Memoirs of a French Lady of Quality, 1800. All his novels indicate an elevated moral aim, and are more remarkable for wide observation than the invention of plot interest.

He is the author of several other works:—*Medical Sketches*, published in 1785; *A Journal during a Residence in France, from the beginning of August to the middle of December, 1792*, in two volumes, which appeared in 1793-94; *A View of the Causes and Progress of the French Revolution*, in two volumes, published in 1795. Moore was an accurate observer of men and things. His knowledge of mankind was vast; his powers of observation are well displayed in his novels; and his account of the striking scenes of the French Revolution are still well worth reading. A complete edition of his works has been published in seven volumes, with a memoir of his life, by Dr. Robert Anderson.

Elizabeth Hamilton was born at Belfast in 1758. Her father was a merchant, descended from a Scottish family, and died early, leaving a widow and three children. The children were brought up and educated by their relatives. Elizabeth, the youngest, was sent to Mr. Marshall, a farmer in Stirlingshire, married to her father's sister; and the child found a warm home with Mr. and Mrs. Marshall.

[2] Born in 1729; died in 1802.

[3] My father was then under Sir John Moore, and was wounded in the left arm at the battle of Corunna; and of all the generals whom he fought under for a period of fourteen years, Sir John was his greatest favourite.

They adopted and educated her with a care and kindliness that has rarely been matched. She says herself:—"No child ever spent so happy a life, nor have I ever met with anything at all resembling our way of living, except the description given by Rousseau of Wolmar's farm and vintage." At an early age she manifested a keen taste for literature., and wrote many copies of verses. For many years, in the latter part of her life, she lived in Edinburgh, where she was much respected.

Her chief works are:—(1) *The Letters of a Hindoo Rajah*, which appeared in 1796; (2) *The Modern Philosophers*, published in 1800, in three volumes; (3) *Letters on Education;* (4) *Memoirs of Agrippina;* (5) *The Cottagers of Glenburnie*, in 1808; (6) *Popular Essays on the Human Mind;* (7) *Hints to the Directors of Public Schools. The Cottagers of Glenburnie* was the most popular of her efforts. It is a tale of cottage life, of which the scene is laid in a small, scattered Scottish village; and it presents well realised pictures of Scottish rural life in the later part of the last century. She died in 1816.

Mrs. Mary Brunton was born on the 1st of November, 1778, in Burray, a small island of the Orkney group. In this remote region, her father, Colonel Balfour of Elwick, and her mother, an accomplished woman, held a leading position in society. Mary was carefully educated, and her mother taught her French and German; and she was also sent to Edinburgh for some time to complete her education. In 1798 she married the Rev. Mr. Brunton, minister of Bolton, Haddingtonshire; and in 1803 he was appointed to one of the churches in Edinburgh, where Mrs. Brunton had greater facilities for cultivating her mind.

Her novel *Self-Control* was published anonymously in 1811, and proved a success. The first edition was sold in a month, and a second and a third were soon issued. Her next novel, entitled *Discipline*, appeared in 1814, and was well received. She was engaged on another story, which she did not live to finish, having died on the 7th of December, 1818. The unfinished tale and a memoir of the lamented authoress were issued by her husband in one volume. The chief merit of her two completed novels appears in the elevated moral sentiment and purity of tone which pervade them; and in her keen observation and art in the development of traits of character, which give a semblance of reality to her charming stories.

Sir Walter Scott was a wonderful genius, and a man of exceptional industry. The quantity and variety of his writings are amazing. In

the field of the historic novel—pictures of the life, manners, and superstitions of the Scottish people, he is unrivalled. The greater number of his long series of novels have their scenes laid in Scotland, and are characteristically Scottish; although a few of them have their scenes laid in England, the Continent, and the East, even in some of these Scottish characters appear. Scott usually worked in periods pretty near his own time, for considerably more than one half of his novels belong to the eighteenth and seventeenth centuries, and only one of those relating to Scotland go farther back than the fifteenth century. He was not a great thinker, his analytic faculty was not at all remarkable; but he was a keen observer, and had a retentive memory. He had also a pretty wide knowledge of history. But his strength mainly lay in his unrivalled powers of description, a fine sense of the picturesque in scenery, in his vivid and rapid narrative, and varied characterisation of external action; whatever was visible and palpable, lay within his compass.

In many of his novels he shows a fine appreciation of the humorous and comic features of human life. He has an instinctive perception of fitness of touch in the delineation of character, and many of his characters are admirably presented. He often introduces supernatural features, visions, prophecies, and superstitions, and there are incidents in his novels which seem to indicate that he himself had some belief in superstition. Most of his novels contain some hints of agencies beyond the general laws of nature; and in his handling of the supernatural he usually left popular prediction and second sight in a haze. Scott was not an idealist, so the agency which worked marvels was not an invisible spirit, but rather something tangible—a sorcerer or a soothsayer, of which the national records and traditional superstition presented an ample store. From these and many other sources he wove wonderful creations, stirring narratives, striking and charming scenes.

Scott's novels have had a wide influence, stretching far beyond the limits of Britain. The sale and circulation of them has been enormous, not only in this country, but also on the Continent of Europe and the United States of America. After the abolition of the paper duty, they were published in very cheap forms; and millions of the sixpenny edition have been sold. In general the moral tone of his novels is manly and wholesome; and they have been a source of amusement and enjoyment to several generations and many millions of people.

Personally, Scott was a humane and very amiable man, and much beloved by all who knew him. In the evening of his days, when adversity overtook him, then the real greatness of his spirit appeared. He manfully faced the difficulties before him, and struggled to discharge his debts with a hope and fortitude worthy of the greatest hero.[4]

John Galt, a contemporary of Scott, was born at Irvine in 1779. When a boy of eleven years, his parents removed to Greenock; and there he manifested a bent for poetry and music. After finishing his school days, he was employed in the custom-house at Greenock till 1804, when he went to London to push his fortune. There, and in many other quarters of the globe he entered into various schemes with little success; and in the end he chiefly devoted his energies to literature. He was a man of great energy and genius; but unfortunate in most of his undertakings. His life was one of hard struggles, in which, however, his heart and spirit never faltered.

He is the author of a long list of novels, tales, dramatic pieces, and other writings. His original powers were excellent. In his best efforts, within the circle of his cognition, in the perception of motive and character, he was supreme. But his taste was defective, while the untoward circumstances with which he had to struggle, greatly crippled his genius. His fertility, versatility, and industry were very remarkable; but the merits of his novels are unequal. The scenes of most of his novels were laid in Scotland, and dealt with Scottish life and character. The most popular of his novels were the *Ayrshire Legatees*, which appeared in 1820; and the *Annals of the Parish*, written in 1810, but not published till 1821. The *Annals of the Parish* is an excellent tale; and it presents many amusing, striking, and pathetic incidents, and touches of quaint humour.

Galt returned to Scotland in 1835, greatly enfeebled by repeated attacks of paralysis. Yet he wrote several articles for periodicals, and edited the works of others. After severe and long suffering, borne with great fortitude, he died at Greenock, on the 11th of April, 1839.

Mrs. Johnstone[5] is the author of a tale called *Clan Albyn*, which

[4] A valuable and interesting *Life of Scott* was written by his son-in-law, Mr. John G. Lockhart, which was published in 1837; and in 1843 he published his *Life of Scott* in an abridged form. Scott's own interesting Journal was recently published.

[5] Born 1781, died 1857.

appeared in 1815. It throws a romantic glow over Highland scenery and character; her descriptions are vivid and picturesque. In 1827 her novel, *Elizabeth de Bruce*, was published. She also wrote several attractive tales for children, and was a large contributor to the periodical literature of the time. She was for several years editor of *Tait's Magazine*. Her style is smooth and elegant, and her writings characterised by a varied culture and sound judgment.

Susan E. Ferrier[6] was a daughter of James Ferrier, one of the clerks of the Court of Session. She is the authoress of three novels, all of them in three volumes. The first one, entitled *Marriage*, appeared in 1818. She evinces considerable talents and wit, writes in a rather caustic style, and exerts her fine comic humour on the foibles and oddities of mankind. Many artful sarcastic touches occur in the novel, and keen insight of human nature is manifested. Her next novel, *The Inheritance*, was published in 1824. It is more elaborate and better developed than the preceding one; some of her characters are well delineated. Her third novel, *Destiny: or, The Chief's Daughter*, appeared in 1831. Its scene is in the Highlands, and the authoress deals with Highland scenery and Highland manners, but it is not a romantic tale, though in some passages strong passion and feeling appears.

John Wilson was born on the 18th of May, 1785, in Paisley, where his father was a successful manufacturer. He was educated at the University of Glasgow and at Oxford. After leaving Oxford, he purchased the small estate of Elleray, on the banks of the Lake Windermere, in England, where he built a house. He married, kept a yacht, and enjoyed himself amid the fine scenery of the lakes, and wrote poetry. But some reverses overtook him, and, as stated in a preceding chapter, he obtained the chair of Moral Philosophy in the University of Edinburgh in 1820, which he held until his death in 1854. He was not a philosopher, but he was a cultured, amiable, and kind-hearted man. His poetical efforts consist of the *Isle of Palms*, published in 1812; the *City of the Plague*, in 1816, and some other short pieces. His poetry is sweet and soft, but lacking in strength and passion, and it has been eclipsed by his own prose writings.

Wilson was one of the leading contributors to *Blackwood's Magazine* in its palmy days, and in it some of his tales first appeared. In

[6] Born in 1782, died in 1854.

1822 his volume entitled *Lights and Shadows of Scottish Life* was issued. It consists of twenty-four short tales, which relate to Scottish rural and pastoral life. The tales are simple, homely, and pathetic. In 1823 his work entitled *The Trials of Margaret Lyndsay* was published. This tale has many touching scenes, pictures, and incidents. In 1824 his story, *The Foresters*, was issued.

The most important of his contributions to *Blackwood's Magazine* were collected and published, under the title of *The Recreations of Christopher North*, in 1842, in three volumes. They consist of a miscellany of papers and criticisms on a wide variety of subjects. His criticisms on poetry are often discriminative and elegant, and his series of articles on Spenser and Homer have been much admired. A complete collected edition of his writings was published by his son-in-law, Professor Ferrier, in 1855-58, in twelve volumes, and a memoir of his life by his daughter, Mrs. Gordon, was issued in 1862.

Sir Thomas D. Lauder [7] is the author of two interesting novels of the historic class relating to Scottish life—*Lochanduh*, published in 1825, and the *Wolf of Badenoch* in 1827. The Wolf of Badenoch was Alexander Stuart, a son of Robert II., and Earl of Buchan and Lord of Badenoch. He was one of the most turbulent men of the period. In 1830 Sir Thomas published a very interesting account of the great floods in Morayshire, which happened in 1829. He has described the effects of this inundation with great picturesqueness, and presented many pathetic episodes of the suffering of the people. He is the author of a series of *Highland Rambles*, in which there are many striking descriptions of natural scenery. He was commissioned to write a *Memorial of Her Majesty Queen Victoria's Visit to Scotland* in 1842. He was engaged on a work, *A Descriptive Account of Scottish Rivers*, the Tweed and other streams, which he left unfinished, but an edition of it, with a preface by Dr. John Brown, was published in 1874.

Andrew Picken, a son of a manufacturer, was born in Paisley in 1788. He was for some time engaged in business in the West Indies, and afterwards in Ireland and Glasgow. Subsequently he settled as a bookseller in Liverpool, but was not successful, and proceeded to London and engaged in literature. His first effort, *Tales and Sketches of the West of Scotland*, was much esteemed for its local descriptions. His novel entitled *The Sectarian: or, The Church and*

[7] Born in 1784, died in 1848.

the Meeting-house, appeared in 1829, in three volumes, but it was not very successful. The characters which the author drew of the Dissenters irritated many readers. In 1830 he issued *The Dominie's Legacy*, a novel in three volumes, which was well received, and a second edition was soon published. In 1831 he published *The Club Book*, a collection of original tales by different authors, which included two of his own—The Deerstalkers, and The Three Kearneys. He issued the first part of a work entitled *Traditionary Stories of Old Families*, which was designed to comprise the legendary history of England, Scotland, and Ireland. His last work was a novel called the *Black Watch*, which he had just finished when he was struck down by apoplexy, and he died on the 23rd of November, 1833.

James B. Fraser [8] is the author of interesting and amusing Eastern tales. In 1828 he issued *The Kuzzilbash: a Tale of Khorassan*, in three volumes, and afterwards he added a continuation under the title of the *Persian Adventurer*. He described the life and manners of the Persians by stirring narratives, which are partly fictitious and partly real. Many of the scenes are well described, while the narratives are animated and interesting. He also wrote a Scottish story, *The Highland Smugglers*, which, however, is not equal to his Eastern tales.

John G. Lockhart,[9] the biographer of Sir Walter Scott, and editor of the *Quarterly Review* from 1826 till 1852, was the author of four novels. His first effort, *Valerius, a Roman Story*, appeared in 1821 in three volumes. It is a tale of the times of Trajan, the Roman Emperor, who persecuted the Christians in Rome. He evinces much historic knowledge and remarkable powers of realisation throughout the story. Many striking pictures and sketches of Roman life and its associations are vividly pourtrayed. His story entitled *Some Passages in the Life of Mr. Adam Blair, Minister of the Gospel at Cross-Meikle*, published in 1822, is an account of the fall of a Scottish minister, and his restoration, after a period of repentance, to the functions of his profession in the place where he had formerly ministered. The narrative is forcibly written, and presents a clear idea of Scottish character. The nature and circumstances of the story, however, renders it somewhat unpleasant reading. In 1823 his long novel, *Reginald Dalton*, was issued in three volumes. The scene of it is laid in England. A detailed account of college life in Oxford was presented, where Reginald, the hero of the tale, was edu-

[8] Born in 1783, died in 1856.

[9] Born in 1794, died in 1854.

cated ; and, among his acquisitions, he learned to imbibe port-wine. In the course of the story some touching scenes of life are described. His tale of *Matthew Wald* was published in 1824 in one volume. Matthew Wald, the hero of the tale, passes through many changes of fortune, in which there are characteristic scenes.

Lockhart was a highly gifted and accomplished man. Besides his *Life of Scott*, he wrote a *Life of Burns*, published in 1828. It is written in an admirable style, and in a candid and appreciative spirit, and at the time it was a valuable contribution to the biography of the poet. He contributed many articles to *Blackwood's Magazine*, and greatly assisted in giving it a distinctive character. While editor of the *Quarterly Review*, he wrote for it a considerable number of critical articles, which are excellent specimens of his clear and incisive style.

David M. Moir [10] was a native of Musselburgh. He is the author of an exceedingly interesting and humorous Scottish tale, *The Autobiography of Mansie Wauch*, published in 1828. Also the *Legend of Genevieve*, with other tales and poems, issued in 1824. Under the name of Delta (a Greek letter) he contributed many poetical pieces to *Blackwood's Magazine;* and also wrote *Sketches of the Poetical Literature of the Past Half-century*, which appeared in 1851. His poetical writings were edited by Mr. Thomas Aird, with a memoir, and published in 1852 in two volumes.

James Grant [11] was a native of Edinburgh, and served for some time in the 62nd Regiment. He wrote a large number of military and historical novels, and memoirs of eminent commanders, some of which were once very popular. He was pretty familiar with military affairs, and with some periods of Scottish history, and several of his tales present vivid pictures of bypast times.

David Pae was born on the 6th of May, 1828, at Buchanty, on the banks of the Almond, Perthshire, where his father was a miller, and was drowned while attempting to ford the Almond, on horseback, near his own house. David, when an infant, was taken by his mother to Coldingham, on the Scottish Borders, where she remained with her family. He was educated at the parish school. When a mere youth he went to Edinburgh, and was employed by Mr. Thomas Grant, printer and publisher. He had a keen fancy for the drama, and his first literary effort assumed the form of a dramatic criticism.

[10] Born in 1798, died in 1851.

[11] Born in 1822, died in 1887.

He was gifted with fine sensibilities, and earnestly studied the Bible. When the Crimean War was impending he published a pamphlet under the title of *The Coming Struggle*, the aim of which was to warn the people of this country against our alliance with the Papal powers of the Continent. He brought prophecy to bear on transpiring events with a vigour which raised some stir in the country. Shortly after he issued a volume entitled *The Second Advent*, in which he presented his views in a more elaborate form. Afterward he published a treatise on *Mesmerism and Animal Magnetism*, which was followed by a history of America. He had not yet, however, touched the region best suited for his talents. At last he entered into his destined field with a serial story—Jessie, the Bookfolder—which appeared simultaneously in the *North Briton*, published in Edinburgh, and the *Penny Post*, published in Glasgow. This story attained a remarkable success, and was afterward republished in book form. For about nine years he was a contributor to the *North Briton* and the *Penny Post*. He also edited the *Dunfermline Press* for two years, 1859-60, in which several of his stories first appeared. In 1863 he was engaged by Mr. Leng (now Sir John Leng) of the *Dundee Advertiser*, as the story writer for the *People's Journal*, in which many of his stories first appeared, and contributed greatly to render the paper popular and to increase its circulation. When the *People's Friend* was commenced in 1869 he was appointed editor. He continued to edit this instructive miscellany, and to write stories for the *People's Journal*, until his death, which occurred on the morning of the 9th of May, 1884. He died of disease of the heart after an hour's illness.

He was an exceedingly fertile writer. Besides his early efforts mentioned above, he wrote fifty serial stories, many essays and short tales, and also an interesting volume on Rosslyn and Hawthornden, and a drama entitled Drumclog. He was a keen observer of the beauties of external nature, and evinced considerable powers of description. The moral tone of his stories was elevated and manly. Personally he was an amiable man, of a quiet and unassuming character.

The late gifted Professor Minto was the author of three novels—*The Crack of Doom*, published in 1886; *The Meditation of Ralph Hardelot*, issued in 1888; and *Was She Good or Bad*, in 1889.

William Alexander was born on the 10th of June 1826, at Rescivet in the parish of Chapel of Garioch, Aberdeenshire, where his father carried on the trade of a blacksmith. He was educated at the parish school of Daviot, and before his school days ended, his

father gave up the blacksmith business and removed to the farm of Damhead. On this farm from an early age, William engaged in agricultural work, and acquired an accurate knowledge of the rural life of Aberdeenshire, which he afterwards turned to excellent account. He greatly enjoyed agricultural work, and rural life. But in early manhood a serious accident necessitated the amputation of a limb, which entirely changed his mode of life. During the time of his confinement and convalescence he began a course of reading, and practised composition in the form of essays and stories, which widened the scope of his knowledge and improved his naturally well-balanced mind. His first literary effort which appeared in print, was an essay on farm-servants, written in competition for a prize offered by the proprietors of the *North of Scotland Gazette*. His essay won the prize; and shortly after Mr. M'Combie, the editor, offered him employment on the paper which he gladly accepted. In May 1853, the *Gazette* was reconstituted as the *Free Press*, and Mr. Alexander continued to occupy an important position on the staff of this paper and its allied issues—the *Weekly Free Press* and the *Evening Gazette*.

He wrote a story entitled *The Authentic History of Peter Grundy*, which appeared in the *Free Press*, but has not been republished. His story—*Johnny Gibb of Gushetneuk*, in the parish of Pyketillim, with Glimpses of the parish politics about 1843, was commenced in the *Free Press* in September 1869. It is an excellent story, and was republished in book form in 1871. It is intensely interesting, remarkable for its natural and true characterisation, and its quaint humour and pathos; while it is especially valuable philologically, as embodying a pretty full and pure specimen of the Aberdeenshire dialect, of which the author was a thorough master. It became popular, and has passed through ten editions. In 1875 his volume under the title of *Sketches of Life Among My Ain Folk* was published, and consists of four short stories, which present graphic pictures of social life in Aberdeenshire, with many touches of humour and pathos. His volume entitled *Notes and Sketches of Northern Rural Life in the Eighteenth Century*, was published in 1877. This is a comparatively small but interesting essay, and gives an instructive account of the social condition and industrial life of the region and period with which it dealt. He also wrote papers on *Aberdeenshire Agriculture*, and the *Making of Aberdeenshire*, which were published. He contributed a number of articles and sketches to various

periodicals, which mainly treated on the life and social conditions of North-eastern Scotland. His minor stories and fugitive pieces were very numerous. In recognition of his literary activity and the merit of his writings, in 1886 the University of Aberdeen conferred on him the honorary degree of Doctor of Laws.

As a journalist, he attained notable distinction. His sound judgment, tact, and considerate character, were conspicuous. He was always ready to advocate any cause or movement to the utmost of his power, which he believed to be necessary for the public good, or calculated to alleviate suffering, and promote the happiness of the community. When occasion demanded it, he showed great determination and independence. Outside the functions of journalism, he took an active part in the affairs of various public institutions in the city. He was a director of the Royal Infirmary, a member of the Public Library Committee, and a member of the Association for the Improvement of the Condition of the Poor.

Personally, he was a very amiable and kind-hearted man. His benignant and thoughtful countenance, genial and inspiriting conversation left an abiding impression. As every one, who came within the influence of his voice felt that there was a firm conviction and earnest thought behind it. After a short illness, he died at his residence in Aberdeen on the 19th of February, 1894.

Robert Lewis Stevenson was a son of Thomas Stevenson, an eminent civil engineer, and was born in Edinburgh on the 13th of November 1850. He was a delicate boy, and very studious in his own way. He was educated at the University of Edinburgh; but according to his own account he did not regularly attend any of the classes. He once remarked—"I am sorry, indeed, that I have no Greek, but I should be sorrier still if I were dead; nor do I know the name of that branch of knowledge which is worth acquiring at the price of a brain fever." He became a member of the Scottish Bar, but never practised law. He devoted his attention to literature, and attained distinction as a novelist, essay writer, and poet. In the later years of his life, he resided in the island of Samoa, where he died on the 8th of December 1894.

He is the author of over twenty novels and romances, several volumes of poetry and ballads, and a number of excellent essays. Some of his novels have been very popular, and reached a large sale. His *Underwoods*, a volume of poetry, has reached a sixth edition. This volume contains thirty-eight pieces in English and sixteen in

Scotch, and in both the personal characteristic prevails, yet they are interesting. The first among the Scotch pieces is entitled "The Maker to Posterity," and begins thus :—

"Far 'yont amang the years to be,
When a' we think, an' a' we see,
An' a' we luve's been dung ajee
By time's rouch shouther,
An' what was richt and wrang for me
Lies mangled throw'ther;
It's possible—it's hardly mair—
That some ane, ripin' after lear—
Some auld professor or young heir,
If still there's either—
May find an' read me, an' be sair
Perplexed, puir brither!
'What tongue does your auld bookie speak?'
He'll spier; an' I, his mou to steik:
'No bein' fit to write in Greek,
I wrote in Lallan,
Dear to my heart as the peat reek,
Auld as Tantallon.
Few speak it than, an' noo there's nane;
My puir auld sangs lie a' their lane,
Their sense, that ance was braw an' plain,
Tint a' thegether.
Like runes upon a standin' stane
Amang the heather.'"

As a novelist, he had the art of rendering his writings interesting. His faculty of description was fairly good. He had the power of grasping incidents and circumstances, realising and combining them, and presenting attractive stories.

In conclusion, it may be indicated that in earlier times the ballad literature, traditional tales, and chap-books, partly held the place among the people, which is now mainly filled by modern fiction. In the present century there has been a great development of this branch of literature, and during the last thirty years enormous quantities of fiction have appeared in the periodical and newspaper press. There are varied forms, classes, and qualities of fiction. Much of it is merely written for amusement, much also for special purposes, such as various religious aims, and moral aims. It seems extremely doubtful, if the intense struggle in this branch of literature to produce sensational and exciting stories is more likely to elevate than to debase the moral sentiments of the people.

CHAPTER XLIII.

Literature of the Eighteenth and Nineteenth Centuries (continued)—Religious and Miscellaneous Literature.

Section I.

Religious Literature of the Eighteenth and Nineteenth Centuries.

THE religious literature of Scotland in the form of sermons and hortative discourses is pretty large, but in the department of theology there are comparatively few works of high authority, which may be accounted for upon the ground that until recently there was little necessity for such works, as the religious differences of belief among the Scots were not concerning the existence and attributes of God nor the fundamental doctrines of Christianity, but chiefly as to forms of Church government, and the powers of the Established Church in relation to the State. These were the grounds on which differences in convictions and opinions prevailed among the people of Scotland, and hence the characteristics of the religious literature of the country.

The Rev. Ebenezer Erskine and his brother, the Rev. Ralph Erskine,[1] were both celebrated in the history of the national Church, but they were more remarkable for their personal influence and preaching than as writers. Ebenezer Erskine was the founder of the Secession Church, a man of great energy and strength of will. A collection of his sermons in five volumes has been published.

The sermons of Ralph Erskine are numerous, and he also composed *Gospel Sonnets*, which appeared in 1760 in two volumes, but they are devotional, not poetical. He was minister of the Church of Dunfermline, but joined the Secession with his brother and withdrew from the Establishment.

The Rev. Dr. John Erskine[2] was the eldest son of Erskine of Cardross, author of the *Principles of the Law of Scotland.* Mr. Erskine studied for the Church at the University of Edinburgh, and

[1] Ebenezer was born in 1680, and died in 1755; Ralph was born in 1682, and died in 1751.

[2] Born in 1721, died in 1803.

after completing his course he was ordained minister of the parish of Kirkintilloch in 1744. In 1753 he was presented to the church of Cardross; in 1758 he was transferred to the charge of the new Greyfriars Church in Edinburgh; and in 1765 he was appointed one of the ministers of old Greyfriars Church, where he had for his colleague Dr. Robertson. He was a learned divine, and the author of a long list of discourses and theological dissertations. He also has the honour of being among the first who advocated the cause of Foreign Missions in the Church of Scotland.

Dr. Alexander Webster[3] was minister of the Tolbooth Church in Edinburgh. It was reported that at the time of the Rising of 1745 he wrote several patriotic songs to arouse the loyalty of his countrymen. After the battle of Culloden he was appointed to preach the thanksgiving sermon, which, with a few other of his sermons, was published. He has the merit of originating the Ministers' Widows' Fund, and also of carrying out the first attempt at a census in Scotland. According to the returns obtained by him in 1755, the population of Scotland was 1,265,380. He was an able and characteristic man in his day.

Dr. John Witherspoon was born on the 5th of February, 1722, in the parish of Yester, where his father was minister. He was educated at the University of Edinburgh, and at the age of twenty-one he was licensed to preach. In 1744 he was appointed minister of the parish of Beith. His pamphlet, entitled *Ecclesiastical Characteristics*, which appeared in 1753, was mainly directed against flaws in the principles and practice of some of the ministers of the Church. As it showed a strain of satire, it soon attracted attention, became popular, and reached a fifth edition in 1762. In 1756 his treatise on the *Connection between the Doctrine of Justification by the imputed Righteousness of Christ and Holiness of Life* was published. The following year his *Inquiry into the Nature and Effects of the Stage* appeared. On this subject there was much difference of opinion, yet it was generally recognised that he had treated the subject with ability and candour. In 1757 he received a call from the Low Church of Paisley, which he accepted. While carefully discharging his pastoral functions in Paisley, he published several sermons, and in 1764 his *Essays on Important Subjects* were issued in three volumes. Shortly after he received a call from a congregation in Dublin,

[3] Born in 1707 and died in 1784.

another from the Scottish church at Rotterdam, and one from a congregation in Dundee, but he declined these invitations and remained in Paisley. Some years later, however, he was invited by the Trustees of the College of Princeton, New Jersey, in America, to become the President of that Institution, and he accepted the invitation and resolved to cross the Atlantic. On the 16th of April, 1768, he preached a farewell sermon to his congregation in Paisley, and in July he sailed for America.

Immediately after his arrival at New Jersey he entered on his new duties. He soon made changes in the system of instruction which had previously prevailed in the College; he extended the study of mathematical science, and improved the method of teaching natural philosophy. But his peaceful career was interrupted, and for a time terminated, by the American War of Independence. He joined the Colonists in this great struggle, and on the 17th of May, 1776, he expressed his view of the subject in a lecture delivered at Princeton, which was published. In 1776 he was elected to represent the people of New Jersey in the Congress of the United States, and acted as a member for seven years. He had considerable influence in Congress, and wrote a number of important State papers. After the settlement of 1783 he resumed his duties at Princeton. In 1785 he visited his native country with the aim of raising a fund for the College, which had been much injured by the war, but party-feeling was then rampant in Britain, and his mission was not a success. He stayed a short time at Paisley, and preached in two of the churches; and taking a final farewell of his friends, returned to America. He continued to perform his duties at the College until his death on the 15th of November, 1794. His writings evinced much knowledge of human nature, while his style was animated, simple, and attractive.

One of the most popular ministers of the eighteenth century was Dr. Blair,[4] a native of Edinburgh. He was first appointed minister of a parish church in Fifeshire, but being noted as a preacher, he was called to one of the city churches of Edinburgh. In 1759 he commenced a course of lectures on rhetoric and *belles-lettres*, which were subsequently published. In 1763 he issued a *Dissertation on the Poems of Ossian*. The first volume of his sermons was published in 1777, which was followed by other three, and a fifth volume which he had prepared, was published after his death. These volumes of

[4] Born in 1718, died in 1800.

sermons were once exceedingly popular, though it is difficult to discover the reason why they were so; they are perhaps grammatically correct in composition, but they are monotonous in style, and as for grasp of thought or reasoning, elevated emotion, or impassioned eloquence, they have none.

Dr. James MacKnight was a son of the Rev. William MacKnight, minister at Irvine, and was born on the 17th of September, 1721. He received the rudiments of education at the school of Irvine, and at the age of fourteen he entered the University of Glasgow, and passed through the usual course of study. Afterwards he proceeded to Leyden and studied theology, where he had an opportunity of reading many valuable works by foreign divines. On returning to Scotland he was licensed to preach. In 1753 he was appointed minister of Maybole; in 1769 he was translated to the church of Jedburgh; and in 1772 he was elected minister of Lady Yester's church in Edinburgh.

His writings were chiefly on the New Testament, and for several generations they were greatly esteemed. The first edition of his *Harmony of the Gospels* appeared in 1756, and a second, revised and enlarged, was issued in 1763. The same year he published the *Truth of the Gospel History*, which was intended to confirm by argument and reference to ancient authors what used to be called the Internal, the Collateral, and the Direct Evidences of the Gospel History. In 1795 his elaborate work, *The New Translation of the Apostolical Epistles*, with a commentary and notes, was published in four volumes. This work was long highly estimated. His style had little elegance or ornament, but it is clear, and pertinent to the subject. After a life of assiduous study and useful toil, he died on the 13th of January, 1800.

John Brown[5] of Haddington was a distinguished divine, and the author of various religious works. He belonged to Perthshire, being descended from parents in humble circumstances, both of whom died before he was eleven years of age. He says himself: "I was left a poor orphan, and had nothing to depend on but the providence of God." He was first employed as a shepherd, and afterwards as a pedlar. But before he was twenty years of age, he had taught himself Latin, Greek, and Hebrew. For some time he discharged the functions of a schoolmaster in Kinross, and in 1748 he entered on

[5] Born in 1722, died in 1787.

the study of divinity in connection with the Associate Synod—a dissenting body afterwards merged in the United Presbyterian Church. In 1750 he was appointed minister of the Secession Church at Haddington, and in 1768 he was elected professor of divinity under the Associate Synod, discharging the duties of this office for a period of twenty years.

His chief works are a *Dictionary of the Bible*, published in 1769, and his *Self-Interpreting Bible* which appeared in 1778; *General History of the Christian Church*, in 1771; *A Compendious View of Natural and Revealed Religion; Harmony of Scripture Prophecies*, and many other short religious and devotional treatises. The two first-named works were long popular, and are so still among some sections of Christians.

A grandson of the preceding divine, Dr. John Brown,[6] attained distinction as a minister and a professor of the Secession Church and as a biblical expositor. In 1806 he was appointed minister of a church at Biggar, but in 1822 he was called to Edinburgh, where he became professor of pastoral and exegetical theology in connection with the Associated Synod. As a preacher and lecturer he was masterly, at once vigorous, manly, warm, and exceedingly pathetic, and always rivetted the attention of his hearers.

He is the author of various theological works, amongst which may be mentioned his *Expository Discourses on the Epistles of St. Peter*, the *Epistle to the Galatians*, and the *Epistle to the Romans*. In 1860 Dr. Cairns published a *Life of Dr. Brown*, to which Dr. Brown's own son, John Brown, M.D., added some very interesting particulars, which appeared in *Horæ Subsecivæ* in 1861.

Dr. Henry Hunter was born at Culross, Fifeshire, in 1741. He was educated at the University of Edinburgh, licensed to preach in 1764, and in 1766 appointed one of the ministers of Leith. In 1769 he visited London, preached in several of the Scottish meeting-houses, where his sermons attracted much attention. Soon after he received an invitation to become minister of the congregation in Swallow Street, London, which he declined. In 1771, however, he accepted a call from the London Wall congregation, and removed to his new field of labour. This congregation became warmly attached to him.

[6] Born in 1784, died in 1858. The religious writings of Dr. James Fordyce, Dr. John Drysdale, and Dr. Robert Walker, were of some note, and widely read in their day.

He was also appointed chaplain to the Scottish Corporation in London; and in 1790 he became secretary to the Corresponding Board of the Society for Propagating Christian Knowledge in the Highlands. and to both institutions he rendered important service.

In 1783 the first volume of his *History of the Patriarchs and of Jesus Christ* appeared, which was extended to seven volumes. This work had reached a seventh edition in 1814. He published two volumes of his sermons, and *Lectures on the Evidence of Christianity* in one volume. He also attained some distinction as a translator of French and German works. He commenced the publication of a popular *History of London and its Environs*, which he did not live to complete. Dr. Hunter was a genial and benevolent man, and his social characteristics and conversation were much esteemed. He died in 1802.

Dr. William L. Brown, a son of the Rev. William Brown, was born at Utrecht on the 7th of January, 1755, where his father was then minister of the Scottish Church; but in 1757 his father was appointed Professor of Ecclesiastical History in the University of St. Andrews, and he returned to Scotland and assumed the duties of the chair. Although young Brown was sent to the Grammar School, he mainly received his early education from his father at home. At the age of twelve he entered the University of St. Andrews, where he studied seven years. In 1778 he was elected minister of the Scottish church at Utrecht. He discharged his pastoral functions with zeal and credit; but trying times were approaching. In 1787 he was appointed Professor of Moral Philosophy and Ecclesiastical History in the University of Utrecht. His "Essay on the Natural Equality of Men, the Rights that result from it, and the Duties which it imposes," was published at Edinburgh in 1793, and the following year reprinted at London. It attracted considerable attention. and may be characterised as a discriminative discussion of the subject. Brown resided at Utrecht, and continued to discharge his professorial duties till the invading French army approached, when, in January, 1795, he embarked with his family in an open boat and landed in England. On returning to Scotland in the summer of 1795 he was appointed Professor of Divinity in Marischal College, Aberdeen, and a few months later he was made Principal of the College. He entered on his functions at the opening of the ensuing session, and delivered an elaborate course of theological lectures. He held the offices of Pro-

fessor and Principal until his death, which occurred on the 11th of May, 1830, in the seventy-sixth year of his age.

Besides the Essay mentioned above, he wrote pamphlets on the Revolutionary War with France, which were published in 1795-98. A volume of his sermons appeared in 1803. His important *Essay on the Existence of a Supreme Creator* was published in 1816 in two volumes, and gained the first Burnett prize of £1250; the second prize was awarded to Dr. Summers, Bishop of Chester. His other large work—*A Comparative View of Christianity and of Other Forms of Religion which have existed in the World*—was published in 1826 in two volumes. This work evinced great research, and it is composed in a clear and calm style.

Dr. George Hill, principal of St. Mary's College, St. Andrews, one of the leaders of the moderate party of the Church, is the author of *Lectures on Divinity*, which were published after his death, by his son, Dr. Alexander Hill. They are chiefly remarkable for clearness in the statement of doctrines, and candour in representing the views of opponents.

Dr. Andrew Thomson[7] was a vigorous and able minister of the Scottish Church. He was first appointed minister of Sprouston, in the presbytery of Kelso; afterward of the East Church in Perth; and finally of St. George's Church in Edinburgh. In 1810 *The Scottish Christian Instructor* appeared under his editorship, and it exercised a considerable influence on Scotch ecclesiastical questions. In the General Assembly he was a strong, an able, and a vehement debater, and an unsparing opponent in controversy. He was the author of various sermons and lectures.

Dr. Thomas Chalmers[8] was the most distinguished of the Scottish divines of the first half of the present century. He was a native of Anstruther, in Fife; his father was a merchant there, and Thomas was sent at the age of twelve to the University of St. Andrews. Thus he received little preparatory grounding in his education, which may account for his lack of critical power as a scholar. Having finished his studies for the Church in 1803, he was appointed minister of Kilmany, a country parish in his native county. In this place his energy soon manifested itself; he lectured on chemistry in the towns of his district; he joined a volunteer corps;

[7] Born in 1779; died in 1831.

[8] Full and interesting details of Dr. Chalmers are given in Dr. Hanna's Memoirs of him.

he wrote a book on the resources of the country, and pamphlets on some of the topics of the day. When the *Edinburgh Encyclopædia* was projected, he was asked to be a contributor, and engaged to write the article "Christianity."

In 1815 Dr. Chalmers removed from Kilmany to the Tron Church in Glasgow, and, in 1819, to St. John's. In this city he worked incessantly, and his fame rose rapidly. Yet it was said by competent eye-witnesses that his appearance and manner in the pulpit were his not prepossessing; he read his sermons and adhered closely to paper. But his power lay in the intensity and earnestness, the vehement and concentrated glow of his mind, throwing out his native eloquence like the blasts of a furnace.[9] Chalmers worked hard for the benefit of his congregation, and struggled to the utmost to excavate the practical heathenism of the city.

In 1823 Dr. Chalmers was appointed professor of moral philosophy in the United College of St. Andrews; and in 1828 he was elected to the chair of divinity in the University of Edinburgh. A description of his inaugural address in the divinity chair in Edinburgh has been preserved, of which the following is a part:—"As to his discourse, all felt far more deeply than they could worthily declare, that it was a most glorious prelude, and that at once and for ever his right to reign as king in the broad realms of theological science, and

[9] A writer in the *London Magazine* gives an interesting account of Dr. Chalmers' appearance in London:—When he visited London, the hold that he took on the minds of men was unprecedented. It was a time of strong political feeling; but even that was unheeded, and all parties thronged to hear the Scottish preacher. The very best judges were not prepared for the display that they heard. Channing and Wilberforce went together, and got into a pew near the door. The elder in attendance stood close by the pew. Chalmers began in his usual unpromising way, by stating a few nearly self-evident propositions neither in the choicest language nor in the most impressive voice. "If this be all," said Channing to his companion, "it will never do." Chalmers went on — the shuffling of the congregation gradually subsided. He got into the mass of his subject; his weakness became strength, his hesitation was turned into energy, and, bringing the whole volume of his mind to bear upon it, he poured forth a torrent of the most close and conclusive argument, brilliant with all the exuberance of an imagination which ranged over all nature for illustrations, and yet managed and applied each of them with the same unerring dexterity, as if that single one had been the study of a whole life. "The tartan beats us," said Mr. Channing, "we have no preaching like that in England."

His style became the rage among the young preachers in Scotland, but few of them could do more than copy his defects. His glowing energy, enthusiasm, and powerful mind were wanting.

to rule over their own individual minds as a teacher, was as unequivocal as his mastery over a popular assembly."[10] He relinquished this chair in 1843, when he seceded from the Established Church.

Dr. Chalmers' collected works, published in his lifetime, extended to twenty-five volumes, and treat on a wide range of subjects—natural theology, evidences of Christianity, moral philosophy, commercial and astronomical discourses, sermons, church and college endowments, church extension, political economy, etc. After his death nine more volumes, edited by Dr. Hanna, were added to his works, thus bringing his collected writings up to thirty-four volumes.

The chief characteristics of Chalmers' writings are energy and earnestness, and a great variety of illustration. His knowledge was comprehensive, embracing science as well as a wide circle of literature. He also had an unusually accurate appreciation of the mind, habits, feelings, and the daily life of the Scottish people, which was one, if not the chief, source of his power and influence. In method and in style his writings are defective. His favourite mode of exposition is to present his main theme, idea, or subject in an almost endless variety of forms and different points of view, with the aim of impressing it on the mind of his hearers. He was a man of great sagacity, a real genius; and the work which he accomplished is a monument of his noble faculties, admirably directed for the good of his fellowmen.

Dr. Ralph Wardlaw,[11] a minister of the Independent Church in Glasgow, was the author of *Discourses on the Socinian Controversy*, which appeared in 1814, and have often been reprinted. He also published a number of sermons and theological essays. He was an able divine and an impressive preacher, and worked hard for the moral and spiritual welfare of Glasgow.[12]

Dr. R. T. Candlish[13] was one of the ministers of Edinburgh who seceded from the Established Church in 1843. He was a vigorous and influential member of the Free Church, and a ready and able

[10] One of his pupils, Professor Masson, has stated that Chalmers' course in theology was "really a course of Chalmers himself, and of Chalmers in all his characters. The students were carried through the whole circle of Chalmers' favourite ideas."—*Macmillan's Magazine*, Vol. XI., p. 127.

[11] Born in 1779, died 1853.

[12] Macgeorge's *History of Glasgow*, p. 454, 1881. A life of Dr. Wardlaw was published by Dr. W. L. Alexander in 1856.

[13] Born in 1803, died in 1873.

debater in Church courts. He is the author of the following theological works—1. *Exposition of the Book of Genesis*, 1852 ; 2. *Discourses on the Resurrection*, 1858 ; 3. *Examination of Mr. Maurice's Theological Essays*, and other treatises. His intellect was keen and acute, and he showed considerable research and industry.

Dr. John Cumming,[14] a native of Aberdeenshire, early distinguished himself by his vehement speeches against Popery, and by his peculiar interpretation of the Scriptures touching the duration of the world, and the winding up of the present dispensation. He is the author of a large number of religious books which, to a certain class of readers, are very attractive. Dr. Cumming for many years preached and ministered to a large congregation in London.

Dr. Thomas Guthrie[15] was the son of a banker in Brechin. He was educated for the Church, and after a pretty long period of probation, waiting for a presentation to a vacant church, he was appointed minister of the parish of Arbirlot, in the Presbytery of Arbroath. In 1837 he was appointed one of the ministers of Old Greyfriars parish in Edinburgh, and by his energy and philanthropy attained a high position in the public estimation. He left the Establishment in 1843, and became one of the active founders of the Free Church.

His untiring efforts to reclaim the wretched population of the worst parts of Edinburgh, and his great exertions in the promotion of ragged schools, are well known, and were highly appreciated by the public. He was a kind and warm-hearted man, and inspired with a real catholic spirit. As a pulpit orator he was great ; his sermons glowed with poetic imagery and illustration, striking, pathetic, and highly impressive, and to which his tall and commanding person, powerful, clear, and musical voice, aided in producing a marked effect upon his hearers.

His chief works are—1. *The Gospel in Ezekiel*, published in 1855 ; 2. *Christ and the Inheritance of the Saints*, 1858 ; 3. *The Way to Life*, 1862 ; 4. *The City, its Sins and Sorrows ;* 5. *Pleas for Ragged Schools ;* 6. *Saving Knowledge, addressed to Young Men*, and several other short religious treatises, and tracts on intemperance. These writings are all marked by the distinguishing characteristics of the man himself—Scripture truth, wide and warm sympathies, elevated and generous sentiments, but showing little indication of the logical or critical faculty.

[14] Born in 1809.

[15] Born in 1803, died in 1873.

Dr. Norman Macleod[16] was descended from a family of Highland clergymen; his grandfather was minister of Morven, and his own father was minister of Campsie, in Stirlingshire. Norman was educated at the Universities of Glasgow and Edinburgh, in which he attained no marked distinction. For a short time he acted as tutor to the son of a Yorkshire gentleman, with whom he visited Weimar, and in that little capital Macleod enjoyed himself amazingly.

His first charge was Loudon, in Ayrshire, a district at that time inhabited by a small portion of Covenanting farmers and a large number of political weavers. With both these parties he soon had his difficulties. The Covenanting theologians examined him on the "fundamentals," and the weavers scoffed at religion, and keenly disputed his political opinions. "When visiting one well-known Chartist, he was requested to sit down on a bench at the front door, and discuss the 'seven points.' The weaver, with his shirt sleeves turned up, his apron rolled about his waist, and his snuff mull in his hand, vigorously propounded his favourite political doctrines.

"When he had concluded, he turned to the minister and demanded an answer, and Norman replied thus:—'In my opinion your principles would drive the country into revolution, and create in the long-run national bankruptcy.' 'Nay-tion-al bankruptcy,' said the old man meditatively, and diving for a pinch, 'Div-ye-think-sae;' then briskly, after a long snuff, 'Dod, I'd risk it.'

But the warm heart and kind manner of the young minister softened down all opposition. In 1843 he was presented to the parish of Dalkeith; and in 1851 he was appointed to the Barony parish of Glasgow, in which he continued to labour till his death. He took an active interest in the affairs of this great city, in church extension, and educational matters. A monument in the form of a statue was erected to his memory in the vicinity of the church in which he ministered, by the citizens of Glasgow.[17]

His first literary effort was a volume entitled *The Earnest Student*, an account of his brother-in-law, John Mackintosh. He was editor of *Good Words*, a monthly periodical projected by Mr. Strahan the publisher, from 1860 till his death, and to its pages he contributed his stories, "The Old Lieutenant," "The Highland Parish," "The Starling," etc. These and his *Travels in the East* are interesting and pleasant reading. He was more a man of action than a thinker.

[16] Born in 1812, died in 1872.

[17] Macgeorge's *History of Glasgow*, pp. 478-479.

His efforts were directed to promote the good of mankind, and he was equally popular with the Court, the aristocracy, and the inmates of the darkest abodes of Glasgow.

The Rev. Dr. John Eadie [18] was a native of Alva, in Stirlingshire, and by his earnest efforts and industry, rose to distinction as a biblical scholar. He was an assiduous and successful student, and in his twenty-first year he was inducted pastor of the Cambridge Street U.P. Church in Glasgow. After preaching there for a quarter of a century, he removed with his congregation to a more spacious church on the Great Western Road, at Kelvin Bridge, which was erected at a cost of £12,000.[19]

He was the author of many works, amongst which are :—1. *An Analytical Concordance of the Holy Scriptures ;* 2. *Biblical Encyclopædia ;* 3. *Commentaries on the Greek Texts of the Epistles of St. Paul to the Colossians, Ephesians, and Philippians ;* 4. *Early Oriental History ;* 5. *History of the English Bible ;* 6. *Ecclesiastical Cyclopædia of Antiquities*, etc.

The Rev. Robert Buchanan [20] was an eminent Free Church minister. He was educated at the University of Glasgow, and is the author of the well-known work, *The Ten Years' Conflict, an Exposition of the Causes of the Disruption.* He was a man of remarkable business abilities, and one of the chief organisers of the Free Church.

Dr. John Tulloch, Principal of St. Mary's College, St. Andrews, was born in 1822 and died in 1885. He is the author of a number of interesting works. His first important effort was his treatise on Theism, for which he received one of the Burnett prizes in 1855. His other works are :—1. *Leaders of the Reformation, or Sketches of Luther, Calvin, Latimer, and Knox*, which appeared in 1859 ; 2. *English Puritanism and its Leaders, Cromwell, Milton, Baxter, and Bunyan*, 1861 ; 3. *Beginning Life, Chapters for Young Men*, 1862 ; 4. *The Christ of the Gospels and the Christ of Modern Criticism*, 1864 ; 5. *Studies in the Religious Thought of England*, 1867 ; 6. *Rational Theology and Christian Philosophy of England in the Seventeenth Century*, two volumes, 1872 ; 7. *The Christian Doctrine of Sin*, 1876 ; 8. *Some Facts of Religion and of Life*, 1877 ; 9. *Modern Theories in Philosophy and Religion.*[21]

[18] Born 1813, died in 1876. [19] Macgeorge's *History of Glasgow*, pp. 479-480.

[20] Born in 1802, and died in 1875.

[21] Dr. Tulloch contemplated writing the history of modern Scotland, but I fear that he has not left it in a complete form. In 1877 he himself informed me of his purpose to write such a work, and said that he had then made some progress in preparing materials for it, but complained with some feeling of the difficulty of finding the requisite materials.

He was for several years editor of *Fraser's Magazine*, and enriched its pages with various critical and literary articles. His style is clear, easy, polished, and flowing. In describing individual men, their writings, opinions, and views, his expression is often very fine and happy. He was a highly-cultured and accomplished man, with a well-balanced mind, though his analytic powers were not remarkable.

Dr. Tulloch was liberal minded, and took an active part in the proceedings of the General Assembly of the Church of Scotland. He had the reputation of being a good public speaker, and his last speech in the General Assembly was one of his greatest oratorical efforts. He frequently delivered public lectures to literary societies and institutions.

William Milligan, the son of a Scottish minister, was born in Edinburgh on the 15th of March, 1821. He was educated at the High School of Edinburgh and the parish school of Kilconquhar, in Fifeshire, and entered the University of St. Andrews in 1835. He graduated in Arts in 1839; and subsequently studied divinity at St. Andrews and Edinburgh. In 1844 he was appointed minister of the parish of Cameron, in Fifeshire, in which he earnestly discharged his pastoral functions and duties for sixteen years. He was appointed to the Chair of Divinity and Biblical Criticism in the University of Aberdeen in 1860. He entered with much energy upon the work assigned to his chair, and proved an able and successful professor. For many years he took an active part in the work of the General Assembly of the Church of Scotland. In 1875 he was appointed Depute Clerk of Assembly, and on the death of Principal Tulloch in 1886 he was appointed Chief Clerk of Assembly. As a citizen of Aberdeen, he took a warm interest in everything calculated to improve the social state and promote the happiness of the community. For six years he was a member of the Aberdeen School Board, and three years its Chairman. In short, he was ever ready to advocate any humane and beneficent movement. In July, 1893, he resigned his Chair in the University, intending to reside in Edinburgh during the evening of his days. Before leaving Aberdeen he had a serious illness. In the middle of October he removed to Edinburgh with his family, but his strength was failing. He died, with his beloved wife and his children around him, on the 11th of December, 1893.

His contributions to religious literature were considerable and important. In 1855-58 he contributed a number of articles on New

Testament subjects to Kitto's *Journal of Sacred Literature*. In 1864-66 he contributed articles to the *Imperial Bible Dictionary*, and subsequently many religious articles to the *Contemporary Review* and to other reviews and magazines. He was appointed Croall Lecturer for 1879-80, and delivered his lectures in Edinburgh on the subject of "The Resurrection of our Lord." In 1881 the lectures were published in a volume, with notes. He has treated this important and very difficult subject with rare insight, much ability, and earnestness. It is an interesting book, and has had a wide circulation. His first course of Baird Lectures on the *Revelation of St. John* were published in 1886, and has reached a third edition. His second course of Baird Lectures on *The Ascension and Heavenly Priesthood of our Lord* were issued in 1892, and attracted notice. Dr. Milligan's writings have had a considerable influence in religious circles.

William Robertson Smith was born on the 8th of November, 1846, at the Free Church manse of Keig, Aberdeenshire, where his father was minister. He was mainly educated by his father at home, and entering the University of Aberdeen in 1861, had a very distinguished university career. He gained the Fullerton Scholarship for mathematics and natural philosophy. He studied theology at the Free Church College, Edinburgh, and subsequently studied for some time at the Universities of Bonn and Göttingen. In 1870 he was appointed Professor of Oriental Languages in the Free Church College at Aberdeen, proving himself an excellent teacher. His admirable historic criticism and expositions of the Old Testament were deemed too advanced for the time, and brought him into conflict with the courts of the Free Church. His struggle for freedom in Biblical criticism was protracted, and at times very vehement. Though young in years, he defended his views and conclusions with rare and astonishing ability. His grasp of thought, readiness in debate, candour and earnestness, were conspicuous throughout the conflict. Indeed, he achieved a great victory for freedom of thought, though he had to vacate his chair in the College in 1880.

Shortly after his removal from this position, he was appointed joint-editor with Professor Spencer Baynes of the *Encyclopædia Britannica*, and after Baynes' death he became sole editor. In 1883 he was appointed Lord Almoner's Reader in Arabic at Cambridge University. In 1886 he was elected Librarian of the University; and in 1889 was appointed to the Sir Thomas Adam's Professorship of Arabic at Cambridge. He received the degrees of LL.D. from the University

of Aberdeen in 1882; and was appointed Burnett Lecturer in the University in 1888. Between 1888 and 1891 he delivered three courses of lectures on "The Primitive Religion of the Shemitic Peoples viewed in their relation to other ancient Religions and to the spiritual religion of the Old Testament and Christianity." For several years he had been suffering from ill-health, yet was always courageous and hopeful, and continued to work assiduously. He died at Cambridge on the 31st of March, 1894.

His principal writings consist of a series of important articles contributed to the *Encyclopædia Britannica* on Biblical subjects, embracing "Angel," "Bible," "Canticles," "Chronicles," "Haggai," "Hebrew Language and Literature," and other articles. These created much alarm, and led to proceedings in the Free Church courts, mentioned before, but they are all excellent specimens of historical criticism and interpretation. In 1881 his work entitled *The Old Testament in the Jewish Church, Twelve Lectures on Biblical Criticism,* appeared; the lectures were delivered to large audiences in Edinburgh and Glasgow. In his preface to the work he says—"It is of the first importance that the reader should realise that Biblical criticism is not the invention of modern scholars but the legitimate interpretation of historical facts. . . . The great value of historical criticism is that it makes the Bible more real to us. . . . In all true religion the new rests upon the old. No one, then, to whom Christianity is a reality, can safely acquiesce in an unreal conception of the Old Testament history; and, in an age when all are interested in historical research, no apologetic can prevent thoughtful minds from drifting from faith if the historical study of the Old Testament is condemned by the Church and left in the hands of unbelievers." This work shows evidence of wide and careful research, accurate knowledge, and rare discrimination. His work on *Kinship and Marriage in Early Arabia* was published in 1885, and it is marked by his characteristic faculty of handling historical subjects. The first series of his Burnett Lectures on the *Religion of the Semites* was published in 1889, and is a very remarkable work. His historical method was thorough, embracing a search for everything relating to the subject. His keen insight, and faculty of digesting and explicating the customs and characteristics of early religions, were marvellous. His mind was vigorous and intently active, and his acquired knowledge vast and varied. The result of his supreme efforts for freedom of Biblical criticism has been remarkable.

There are a considerable number of periodical publications devoted to religious literature which are pretty widely circulated in Scotland. Fiction of a religious turn and character has also been freely produced and circulated during the present generation. In short, religious literature, both in its higher and lower departments, has undergone a marked change and improvement within the present century. In the higher department of religious thought, and the historical criticism and exposition of the Scriptures, there has been a revolution in Scotland; the freedom of inquiry and the latitude of statement of doctrine and opinion which now prevails would not have been permitted or tolerated half a century ago.

Section II.

Miscellaneous Literature of the Eighteenth and Nineteenth Centuries.

Dr. John Arbuthnot[22] was a native of a place of the same name in Kincardineshire. He was educated at the University of Aberdeen; and having studied medicine, he went to London, where he attained some reputation as an author and a wit. He became an associate of Pope, Swift, Gay, and Prior, and was connected with some of the humorous and comic efforts of the time; they were all Jacobites, and deeply interested in the success of that party. He wrote an *Examination of Dr. Woodward's Account of the Deluge*, and an *Essay on the Usefulness of Mathematical Learning.* The satirical *Memoirs of the Extraordinary Life, Works, and Discoveries of Martinus Scriblerus*, which was published in Pope's works, it is believed, was chiefly written by Arbuthnot. The design of this work was to ridicule all the false tastes in learning, and is a book of rare merit.

In 1709, Arbuthnot was appointed physician-in-ordinary to the Queen. In 1712, his *History of John Bull* appeared—a monument of wit and humour. Its main design was to throw ridicule upon the Duke of Marlborough, and render the nation discontented with the French war. The allegory in this performance is admirably sustained, and the satirical allusions stinging and happy. The following is from *John Bull*—that is, the English; Nic Frog is the Dutch, and Hocus the Duke of Marlborough :—

[22] Born in 1667; died in 1735.

"For the better understanding the following history, the reader ought to know that Bull, in the main, was an honest, plain-dealing fellow, choleric, bold, and of a very inconstant temper; he dreaded not old Lewis either at backsword, single falchion, or cudgel-play; but then he was very apt to quarrel with his best friends, especially if they pretended to govern him; if you flattered him, you might lead him like a child. John's temper depended very much upon the air; his spirits rose and fell with the weather-glass. John was quick, and understood his business very well; but no man was more careless in looking into his accounts, or more cheated by partners, apprentices, and servants. This was occasioned by his being a boon companion, loving his bottle and his diversion; for to say truth, no man kept a better house than John, nor spent his money more generously. By plain and fair dealing, John had acquired some plums, and might have kept them, had it not been for his unhappy law-suit.

"Nic Frog was a cunning, sly rogue, quite the reverse of John in many particulars: covetous, frugal; minded domestic affairs; would pinch his belly to save his pockets; never lost a farthing by careless servants or bad debtors. He did not care much for any sort of diversions, except tricks of high German artists, and legerdemain; no man exceeded Nic in these; yet it must be owned that Nic was a fair dealer, and in that way acquired immense riches.

"Hocus was an old cunning attorney; and though this was the first considerable suit that ever he was engaged in, he showed himself superior in address to most of his profession; he kept always good clerks: he loved money, was smooth tongued, gave good words, and seldom lost his temper; he was not worse than an infidel, for he provided plentifully for his family; but he loved himself better than them all: the neighbours reported that he was henpecked, which was impossible by such a mild-spirited woman as his wife was.

"Law is a bottomless pit; it is a cormorant, a harpy that devours everything. John Bull was flattered by the lawyers that his suit would not last above a year or two at most; that before that time he would be in quiet possession of his business; yet ten long years did Hocus steer his course through all the meanders of the law, and all the courts. No skill, no address was wanting; and, to say truth, John did not starve his cause; there wanted not yellow-boys to fee counsel, hire witnesses, and bribe juries. Lord Strutt was generally cast, never had one verdict in his favour; and John was promised that the next, and next, would be the final determination. But,

alas! that final determination and happy conclusion was like an enchanted island—the nearer John came to it, the further it went from him."

He issued several other satirical pieces, one called the *Art of Political Lying*, and his *Treatise concerning the Altercation or Scolding of the Ancients*. His serious works consist of dissertations on ancient coins, weights, and measures, and some books on medical subjects. He was a cultured and accomplished man, and a real genius and wit in his way.

Henry Home, Lord Kames,[23] was a native of the county of Berwick; he was descended from an ancient family. Educated at home under a private tutor, and having chosen the profession of law, he was called to the Scottish bar in 1734. For a number of years he directed his attention to his profession, and to the composition of treatises connected with it. In 1752 he was raised to the bench, and assumed the title of Lord Kames. He became one of the distinguished members of the literary circles of Edinburgh, and a warm and generous patron of literature, and of every public movement calculated to promote the prosperity and civilisation of the nation. He was a man of great energy and ability, and perhaps no man ever more earnestly desired and endeavoured to advance the prosperity and happiness of his countrymen than this Scottish judge of the eighteenth century.[24]

His writings are:—1. *Essays upon several Subjects in Law*, published in 1733; 2. *The Decisions of the Court of Session from its institution to the present time, abridged and digested in the form of a Dictionary*, in two volumes, 1741; 3. *Essays on British Antiquities* (on legal and constitutional subjects), 1747; 4. *Essays on the Principles of Morality and Natural Religion*, 1751; 5. *The Statute Law of Scotland abridged, with*

[23] Born in 1696, and died in 1782. A very full and appreciative *Account of the Life and Writings of Lord Kames* was written by Alex. F. Tytler of Woodhouselee, and published in 1807 in two large volumes.

[24] Dr. Reid, who knew Kames well, says:—"It is difficult to say whether that worthy man was more eminent in active life or in speculation. Very rare, surely, have been the instances where the talents for both were united in so eminent a degree. . . His private virtues and public spirit, his assiduity through a long and laborious life in many honourable public offices with which he was entrusted, and his zeal to encourage and promote everything that tended to the improvement of his country, in laws, literature, commerce, manufactures, and agriculture, are best known to his friends and contemporaries."

Historical Notes, 1757 ; 6. *Historical Law Tracts*, 1759 ; 7. *Principles of Equity*, 1760 ; 8. *Introduction to the Art of Thinking*, 1761 ; 9. *Elements of Criticism*, in three volumes, 1762 ; 10. *Sketches of the History of Man*, in two volumes, 1774 ; 11. *The Gentleman Farmer, being an attempt to improve agriculture by subjecting it to the test of rational principles.* The mere enunciation of Lord Kames' works evinces his energy and industry.

The most distinctive and important of his works are the *Elements of Criticism*, and the *Sketches of the History of Man.* Considered as an attempt to investigate the principles of the fine arts, as results of the operations of the human mind, his *Elements of Criticism* has merits, although it has also many defects. The subject is one of considerable difficulty, and he was among the first to attempt its exposition in modern times. His *Sketches of Man* contains some curious facts, important hints, and acute reflections on society. Although style was the object of his attention, yet he never attained this ; his sentences are usually cast in the same mould, with little variety in their arrangement and form ; are generally too short, and when long, are often involved and faulty in construction.

James Burnet, Lord Monboddo,[25] was born at Monboddo in Kincardineshire. He was educated at King's College, Aberdeen, and studied the civil law at Groningen. He became an advocate, and attained a good practice in the Court of Session. He was raised to the bench in 1767. Lord Monboddo was a man of honour and moral rectitude, but of much eccentricity of character and singularity of opinions, which appeared both in his habits and in the views enounced in his writings.

He was an ardent admirer of Greek literature, and a warm worshipper of Homer. As carriages were not used among the ancients, he never deigned to enter one himself, but performed all his journeys to London and other places on horseback, for he deemed it a degradation of the real dignity of man to be dragged at the tail of a horse instead of mounted upon his back.

His chief works are :—*Essay on the Origin and Progress of Language*, published in 1771-76, in six volumes ; and *Ancient Metaphysics*, which appeared in 1779, in six volumes. In the first-named work, this sage gravely maintained that men were originally monkeys, and that in this condition they continued for ages, without speech, reason, or

[25] Born in 1714, died in 1799.

social affections. He contended that they were gradually improved by successive revolutions, and asserts that in the Bay of Bengal there existed a nation of human beings with tails like monkeys, which had been discovered a hundred and fifty years before by a Swedish skipper. He maintained that all the moral sentiments and domestic affections were the result of contrivance, art, and experience, just like shipbuilding, writing, or any other mechanical invention; thus he was led to place man, in his natural state, below beavers and sea-cats, which he terms social and political animals. Still, on occasion, he could write good sense, such as this :—

"Had we no other desires than those belonging to the animal life, our imaginations, like those of other animals, would be wholly employed about the objects of those desires. But we have other desires belonging to the rational nature, which make our imaginations much more rich and various than those of the brute creation. And, first, we have the love of Beauty of every kind, whether in objects visible or audible, in manners, sentiments, or actions. This love of beauty is congenial with the rational nature, and whoever is entirely devoid of it hardly deserves the name of man. But in this, as in other respects, man differs much from man; for some have the love and taste for beauty in a very small degree; others, whom Nature has formed of her best clay, and heaven bestowed on them more than an ordinary portion of the celestial fire, have it in a very high degree. . . . If it be the beauty of the visible kinds which captivates those minds, and if their imaginations are carried into works, then we have painters, sculptors, and poets, of an inferior kind, I mean descriptive poets. If it be the beauty of sounds, then we have musicians. But if the turn of mind be towards beauties of a higher kind, such as those of sentiments, manners, and actions, then are produced heroic and tragic poets, painters, sculptors, and musicians of the highest order, who express in their compositions what is most sublime and exalted in sentiment and character. The capacity of performing in these several arts is what we call Genius." [26]

Thomas, Lord Erskine,[27] was the youngest son of the Earl of Buchan. He had served both in the army and navy, but resigned his commission and turned to the study of law, being called to the English bar in his twenty-eighth year. He soon took a foremost place, and some of his speeches are fine specimens of English forensic

[26] *Ancient Metaphysics*, Vol. II., p. 265. [27] Born in 1750; died in 1823.

oratory. In 1783, he entered parliament as member for Portsmouth, but his success in the House of Commons was not remarkable. In 1806, he was appointed Lord Chancellor, and received the title of Baron Erskine; he only held the Great Seal for a short time, as he had to retire on the dissolution of the Whig government in the spring of 1807. In 1817, he published a political fragment entitled *Armata*, which contains some good remarks on constitutional law and history.

John Stockdale had published a defence of Warren Hastings, written by the Rev. John Logan, as before mentioned, which it was alleged contained a libel upon the House of Commons, and Erskine undertook the defence of Stockdale. The trial took place on the 9th of December, 1789, and the following is a part of Erskine's speech on the occasion, and refers to the government of India:—

"The unhappy people of India, feeble and effeminate as they are from the softness of their climate, and subdued and broken as they have been by the knavery and strength of civilisation, still occasionally start up in all the vigour and intelligence of insulted nature. To be governed at all they must be governed by a rod of iron, and our empire in the East would long since have been lost to Great Britain if skill and military prowess had not united their efforts to support an authority which heaven never gave, by means which it can never sanction.

"Gentlemen, I think I can observe that you are touched with this way of considering the subject, and I can account for it. I have not been considering it through the cold medium of books, but have been speaking of man and his nature, and of human dominion, from what I have seen of them myself amongst reluctant nations submitting to our authority. I know what they feel, and how such feelings can alone be suppressed. I have heard them in my youth from a naked savage in the indignant character of a prince surrounded by his subjects, addressing the governor of a British colony, holding a bundle of sticks in his hand, as the notes of his unlettered eloquence. 'Who is it,' said the jealous ruler over the desert, encroached upon by the restless foot of English adventure, 'who is it that causes the river to rise in the high mountains and empty itself into the ocean? Who is it that causes to blow the loud winds of winter, and that calms them again in summer? Who is it that rears up the shade of these lofty forests, and blasts them with the quick lightning at His pleasure? The same Being who gave to you a country on the other

side of the waters, and gave ours to us; and by this title we will defend it,' said the warrior, throwing down his tomahawk upon the ground, and raising the war-sound of his nation. These are the feelings of subjugated men all round the globe; and depend upon it, nothing but fear will control where it is vain to look for affection. ."

James Boswell[28] was the son of a Scottish judge, and his *Life of Dr. Johnson* is too well known to require any particular notice in these pages. Boswell studied for the bar, but he attached himself to Johnson, soothing and flattering him, and taking copious notes of his sayings and conversation. In 1773 he accompanied Johnson on his tour to the Highlands; and, after the death of the great lexicographer, in 1785 he published his journal of the tour, giving a record of each day's occurrences. In 1791 his *Life of Johnson* appeared in two volumes; a second edition was published in 1794, and Boswell was engaged in preparing a third when he died. Many editions of the work have since been issued.

Dr. James Currie[29] issued his edition of the *Works of Burns* in 1800 for the benefit of the poet's family. The edition was accompanied by a memoir of the poet, from which subsequent biographers have drawn freely. Dr. Currie's edition realised to the family of Burns the sum of £1400.

Lord Jeffrey[30] was a native of Edinburgh, the son of a gentleman who held the office of depute-clerk in the Court of Session. He was educated at the High School of Edinburgh, the University of Glasgow, and Queen's College, Oxford. After studying law, he was called to the bar in 1794. For many years his income was small, but being sober and industrious, he kept himself out of debt. He was a Whig in politics throughout his career. He was also one of the originators of the *Edinburgh Review*, the first number of which appeared in October, 1802. From 1803 to 1829, Jeffrey was editor and sole manager of the *Review*. In its pages he found ample scope for his political opinions and his literary and critical faculties. Thus Jeffrey and his accomplished associates in the *Review* wielded much political influence throughout that stirring period; and they also produced memorable effects on the periodical literature and criticism of the present century. From the date of the appearance of the *Edinburgh Review*, the standard of criticism in this country has

[28] Born in 1740, died in 1795.
[29] Born in 1756, died in 1805.
[30] Born in 1773; died in 1850.

been gradually rising, and we owe a debt of gratitude to its originators.

In 1820, Jeffrey was elected Lord Rector of the University of Glasgow. On the occasion of his installation he delivered an elegant and interesting address to the students, in which he reminded them that within the walls of this College "he had received by far the most valuable part of his own education." In 1829, Jeffrey was unanimously elected Dean of the Faculty of Advocates; and he then resigned the editorship of the *Review*. On the formation of Earl Grey's administration in 1830, he was appointed Lord Advocate for Scotland, and sat for a short time in parliament. But, in 1834, he was raised to the bench, and as Lord Jeffrey, he discharged the functions of a Scotch judge with marked attention, uprightness, and ability, till the period of his death.

The most important of his contributions to the *Edinburgh Review* were collected by himself in 1844, and published in four volumes, and since reprinted in one large volume. His articles and criticisms cover a wide range of subjects—poetry, elegant literature, moral science, and the philosophy of life. As a critic he discharged his difficult task well, with sound judgment and taste, although occasionally, in the early years of the *Review*, he was rather harsh and severe. In poetic criticism he sometimes failed to appreciate the genuine merits of his author. His ethical ideas and sentiments were pure, elevated, and noble.

I have only space for one short specimen of his style on the prevailing notion that genius is a source of peculiar unhappiness to its possessors:—"Men of truly great powers of mind have generally been cheerful, social, and indulgent; while a tendency to sentimental whining or fierce intolerance may be ranked among the surest symptoms of little souls and inferior intellects. In the whole list of our English poets we can only remember Shenstone and Savage—two, certainly, of the lowest—who were querulous and discontented. Cowley, indeed, used to call himself melancholy; but he was not in earnest, and, at any rate, was full of conceits and affectations, and has nothing to make us proud of him. Shakespeare, the greatest of them all, was evidently of a free and joyous temperament, and so was Chaucer, their common master. The same disposition appears to have predominated in Fletcher, Jonson, and their great contemporaries. The genius of Milton partook something of the austerity of the party to which he belonged, and of the controversies in which

he was involved; but even when fallen on evil days and evil tongues, his spirit seems to have retained its serenity, as well as its dignity; and in his private life, as well as in his poetry, the majesty of a high character is tempered with great sweetness, genial indulgence, and practical wisdom. In the succeeding age our poets were but too gay; and though we forbear to speak of living authors, we know enough of them to say with confidence, that to be miserable or to be hated is not now, any more than heretofore, the common lot of those who excel."

Henry Brougham[31] was a native of Edinburgh, and subsequently known as Lord Brougham. He was educated at the High School and the University of Edinburgh; and, after studying for the legal profession, he was admitted to the Scottish bar, at which he practised for several years. He was also one of the original writers of the *Edinburgh Review*, to which he contributed a long series of articles, chiefly to the earlier numbers. Scotland became too small for him, and he joined the English bar, entered parliament in 1810, allied himself with the Whig party, and pushed his career with great energy. He proved a steady friend to political reform. In 1830, he attained the height of his ambition by his elevation to the Woolsack, with the title of Lord Brougham and Vaux. He held the office of Lord Chancellor for four years, and retired with his party in the autumn of 1834. This ended his official career; but he afterwards worked hard as a law reformer.

His works are numerous, but none of them can be ranked high, either in literature, philosophy, or science, in all of which he tried his hand. His style is loose, heavy, and verbose. His writings are lacking in clear thinking, and definite conclusions; he always seems to be coming to close quarters with the subject, but he never comes to it. I think the best of his works is the one entitled *The British Constitution*, published in 1861. He occupied the later years of his long life in writing notices of his *Life and Times*, which were published in 1871, in three volumes.

The following quotation is from one of his speeches delivered in the House of Commons on law reform :—"The course is clear before us; the race is glorious to run. You have the power of sending your name down through all times, illustrated by deeds of higher fame, and more useful import, than ever were done within these walls.

[31] Born in 1778, and died in 1868.

You saw the greatest warrior of the age—conqueror of Italy, humbler of Germany, terror of the North—saw him account all his matchless victories poor, compared with the triumph you are now in a condition to win—saw him condemn the fickleness of fortune, while, in despite of her, he could pronounce his memorable boast:—'I shall go down to posterity with my code in my hand.' You have vanquished him in the field; strive now to rival him in the sacred arts of peace! The lustre of the regency will be eclipsed by the more solid and enduring splendour of the reign. The praise which false courtiers feigned for our Edwards and Harrys, the Justinians of that day, will be the just tribute of the wise and good to that monarch under whose sway so mighty an undertaking shall be accomplished. Of a truth, the holders of sceptres are most chiefly to be envied for that they bestow the power of thus conquering and ruling. It was the boast of Augustus—it formed part of the glare in which the prejudices of his earlier years were lost—that he found Rome of brick, and left it of marble; a praise not unworthy of a great prince, and to which the present also has its claims. But how much nobler will be the sovereign's boast, when he shall have it to say that he found law dear and left it cheap; found it a sealed book, left it a living letter; found it the patrimony of the rich, left it the inheritance of the poor; found it the two-edged sword of craft and oppression, left it the staff of honesty and the shield of innocence."

It is recorded that Brougham wrote the peroration of his concluding speech for the defence of Queen Caroline no fewer than fifteen times over; yet it is not very impressive.

Robert Mudie,[32] a native of Forfarshire, was a self-educated man and a very industrious writer. He was for some time connected with the London press, and was the author of about ninety volumes on a variety of subjects. Among these may be named his *Picture of Men and Things in London; Modern Athens, a Sketch of Edinburgh Society; The British Naturalist; The Feathered Tribes of Great Britain*, and a series of volumes on the heavens, the earth, the sea, and the air; *Man, physical, moral, social, and intellectual.* Although somewhat deficient in taste, Mudie was an able and vigorous writer. His imaginative and elaborative faculties were of a high order, and he could throw animation and light into the driest subjects.

Mr. George Combe[33] was by profession a Writer to the Signet in

[32] Born in 1777; died in 1842.

[33] Born in 1788, died in 1858.

Edinburgh, but he devoted much of his time and energy to philosophical and literary pursuits. He was a man highly respected by all who knew him, and by his writings has attained a wide reputation. He became a popular expounder of the doctrines of phrenology, which he enforced in a clear and vigorous style.

His chief works are :—1. *Essays on Phrenology*, published in 1819 ; 2. *The Constitution of Man*, 1828 ; 3. *System of Phrenology*, 1836 ; 4. *Phrenology applied to Painting and Sculpture* ; 5. *Notes on the United States of America*, in three volumes, 1841 ; 6. Pamphlets on *The Relation between Science and Religion*, on *Capital Punishments*, on *National Education, The Currency Question, etc.*

He was a man of great intellectual powers and exceptional abilities. All his writings are well worth reading, even apart from his special doctrines of phrenology. His *Constitution of Man* has been exceedingly popular, and has passed through many editions—hundreds of thousands of it having been sold. I have known several of his followers who almost worshipped him, and placed the most implicit faith in the doctrines of the *Constitution of Man*. There is no doubt that his writings have had a considerable influence among certain classes of the people.

The interesting life of Hugh Miller, the self-taught man of science and genius, was admirably narrated by himself in his *Schools and Schoolmasters*. He was a native of Cromarty, born in 1802, and died in 1856. For the last sixteen years of his life he was editor of *The Witness*, a twice-a-week paper. He was a geologist, and a man of great literary talents ; very few excel him as a popular expositor of geology. He had a wide command of expressive and appropriate language, and his imaginative and elaborative powers were of a high order. His descriptions of geological strata and fossil remains are illumined by a vividness of realisation as yet unmatched in this branch of literature.

His works are :—1. *Scenes and Legends in the North of Scotland, or the Traditional History of Cromarty ;* 2. *The Old Red Sandstone*, which appeared in 1841 ; 3. *First Impressions of England and its People*, 1847 ; 4. *Footprints of the Creator*, 1850 ; 5. *My Schools and Schoolmasters, an Autobiography*, 1854 ; 6. *The Testimony of the Rocks :* 7. *The Cruise of the Betsey*, 1858 ; 8. *Sketch-Book of Popular Geology, being a series of Lectures delivered before the Philosophical Institution of Edinburgh ;* and 9, two volumes of essays, being a selection of his articles from the file of *The Witness*.

His writings were popular, and many editions have been issued. The following quotation is taken from an article reprinted from *The Witness* on "A Five-pound Qualification" (franchise), and it exemplifies a feature of his style which he often employs effectively, touching on some striking phase of a different subject to give point to the one that he intended to discuss. The article has also a special interest at the present time.

"When, owing to some deep-seated cause, the general level of a country is heightened by sudden upheaval, not only is its area extended by an apparent recession of the sea, but the outline of its coasts is also very much changed. In places where the land is flat and low, and the water shallow, it receives accessions of great tracts of new country; whereas in other places, where high table-lands sink suddenly into the sea and the water is deep, it is restricted to near its old limits. In Scotland, for instance, that last upheaval which laid dry the old coast line added many a rich acre to the links of the Forth and the Carse of Gowrie, and gave to the country the sites of most of its sea-port towns, such as Leith and Greenock, Musselburgh, Stonehaven, and Inverness; whereas along the rocky shores of Aberdeen and Banff, and especially in Caithness and Orkney, it did little more, save here and there in a narrow inlet, than reduce by some two or three fathoms the depth of the sea at the foot of the cliffs. It left the old boundaries just what they had been. The extension of area which took place in consequence of the upheaval was partial and local, though in the aggregate it added not a little to the general value of the country; and this particular character was altogether a result of the previous form of the surface. We have witnessed something similar in the effects of those great upheavals which occasionally take place in the political world. The Reform Bill effected a wonderful upheaval of this kind. It raised over the sea-level, in certain districts, vast tracts that had been previously submerged, while in other districts it left the old limits unchanged. The high lands of Toryism received no new accession, while those of Liberalism it greatly enlarged. By elevating the long-buried heads of the people above water in the character of ten-pound franchise holders, it strengthened the trading interests or, to carry out our parallel, gave new standing-room to the trading towns; while the agricultural interests, located, if we may so speak, on the high table-lands of the country, remained no broader or stronger than they had been before. And so, in the great struggle which ensued

between the two interests, the agricultural one went down, and free trade won the day. Party, in general, was not a little affected by this great upheaval. The new accessions were chiefly accessions made to the cause of Liberalism in general; but it did quite as little for hereditary Whigism as for hereditary Toryism; and either party feel, when in office, that it has had but the effect of making their position more precarious and less desirable than of old. . . . It has thrown them up nearer than of old to the chill line of perpetual ice and snow, and exposed them to the dangers of treacherous landslips, and sudden avalanches.

"What, let us ask, would be the effect of a still further upheaval of the political area, that would place the ten-pound franchise in the position of a second old coast line, by raising a widely-spread five-pound franchise out of it? To what regions of parties would such an upheaval add new breadth? In what regions would it leave the present limits unchanged? What would be its effect, for instance, on the various parties in Edinburgh?" This was written in the winter of 1856.

In 1850, a work entitled *The Theory of Human Progression, and Natural Probability of a Reign of Justice*, was published anonymously, and dedicated to Victor Cousin, the well-known Eclectic philosopher: and in the dedication it was enounced that "the truth I endeavour to inculcate is, that credence rules the world, that credence determines the condition and fixes the destiny of nations, that true credence must ever entail with it a correct and beneficial system of society, while false credence must ever be accompanied by despotism, anarchy, and wrong—that before a nation can change its condition it must change its credence; that change of credence will of necessity be accompanied sooner or later by change of condition; and, consequently, that true credence, or, in other words, knowledge, is the only means by which man can work out his well-being and ameliorate his condition on the globe." The author, who thus described the object of his work, was Mr. Patrick E. Dove, a warm-hearted and patriotic Scotsman, who died in Australia in 1879.

The work is one of the class now ranked under the term of sociology. It is an able and well-reasoned effort, and though not often referred to directly, still it has had a marked influence in forming several political theories and views of political phenomena since current in this country. Mr. Dove was gifted with a vigorous mind, of a philosophic and scientific cast, and keen and generous

sympathies. The principles and ideas of his work are clearly conceived and fairly elaborated.

It consists of four chapters, the first of which treats on the elements of human progression—the matters involved in political science, liberty, and property; the mode in which men have made laws; the combination of knowledge and reason, and the use and operation of this combination. In the second chapter he expounds his theory of man's intellectual progression, and treats of the order of the sciences—their growth, their processes, their dependence, evolution, and present position; the character and position of political science; the province and object of political economy; the foundation of political society; socialism and communism; and many other points. In the third chapter he advances his theory of man's practical progression, and presents an outline of the argument, that there is a natural probability in favour of the reign of justice; and in support of this view he reasons from the order of knowledge and science—natural truth, which becomes divine truth, and from the influence of Christianity; and illustrates at some length from the practical applications of science. The fourth chapter presents an historical sketch—an attempt to apprehend the sentiments of the human mind which have ruled society, and to appreciate the psychological development of man through historic manifestations. This was of itself a great and very difficult undertaking, and notwithstanding his grasp of principles, and his fine analytic and critical faculties, it is the crudest and the weakest part of his work.

In an appendix he presents a classification of the sciences; and though his work has defects, it is a remarkable effort. I am not aware if Mr. Dove was one of Sir W. Hamilton's students, but I find unmistakeable traces of the influence of his psychology in *The Theory of Human Progression.*

As a specimen of his style, and the interest of the subject, I shall give a quotation touching land:—"The question, then, is, upon what terms, or according to what system, must the earth be possessed by the successive generations that succeed each other on the surface of the globe? The conditions given are—First, that the earth is the common property of the race; second, that whatever an individual produces by his own labour is the private property of that individual, and he may dispose of it as he pleases, provided he does not interfere with his fellows; third, the earth is the perpetual common property of the race, and each succeeding generation has a full

title to a free earth. One generation cannot encumber a succeeding generation.

"And the condition required is, such a system as shall secure to the successive individuals of the race their share of the common property, and the opportunity, without interference, of making as much private property as their skill and enterprise would enable them to make.

"The actual division of the soil need never be anticipated, nor would such a division be just, if the divided portions were made the property legally of individuals, for they could never be so morally.

"If, then, successive generations of men cannot have their fractional share of the actual soil, how can the division of the advantages of the natural earth be effected?

"By the division of its annual value or rent; that is, by making the rent of the soil the common property of the nations. That is, as the taxation is the common property of the State, by taking the whole of the taxes out of the rents of the soil, and thereby abolishing all other kinds of taxation whatever. And thus all industry would be absolutely emancipated from every burden, and every man would reap such natural reward as his skill, industry, or enterprise rendered legitimately his, according to the natural law of free competition. This we maintain to be the only theory that will satisfy the requirements of the problem of natural property."[34]

Again: "Taxation can only be on land or labour. These are the two radical elements that can be subjected to taxation, capital being originally derived from one or the other. Capital is only hoarded labour or hoarded rent; and as all capital must be derived from the one source or the other, all taxation of capital is only taxation of land or labour. Consequently, all taxation of whatever kind is: 1st, taxation of labour, that is, a deduction from the natural remuneration which God intended the labourer to derive from his exertions; or, 2nd, taxation of land, that is, the appropriation of the current value of the natural earth to the expenses of the State.

"Now, labour is essentially private property, and land is not essentially private property, but, on the contrary, is the common

[34] Pp. 384, 387. In a note he says:—"We have no hesitation whatever in predicting that all civilised communities must ultimately abolish all revenue restrictions on industry, und draw the whole taxation from the rents of the soil. And this because the rents of the soil are the common produce of the whole labour of a community."

inheritance of every generation of mankind. Where the land is taxed, no man is taxed, nor does the taxation of land interfere in any way whatever with the progress of human industry. On the contrary, the taxation of land, rightly directed, might be made to advance the condition of the country to a high degree of prosperity." [35]

He was excessively fond of generalising, and frequently attempted it with matters which were not properly prepared for the process; as suggested in the following paragraph: "But beneath the outward variety of man's historic representations, can we not plunge below the surface and seize some stable element, some scheme, some law, some generalised fact, some plan or principle on which the drama has been constructed, some permanent truth that evolves amid all the apparent diversity of images? Can we not transform the real elements as they appear into some abstract form that enables us to state them in a rational equation? Can we not apprehend the essential character of the changes, as well as their empirical character, and derive instruction for the reason, as well as materials for the memory and the understanding?"

His intellect was essentially deductive and logical. He loved to handle a principle, an idea, or a formula; but his mastery of method and expository powers were excellent. He is the author of several other important works, which I can only name: *Elements of Political Science*, 1854; and *Logic of the Christian Faith*, 1856.

George Gilfillan was born at Comrie, Perthshire, on the 30th January, 1813, where his father was minister of the Scottish Secession Church. He entered the University of Glasgow at the age of fourteen. After finishing his course of study in the University, he passed through the course of training in the Divinity Hall of the Secession Church. He was licensed to preach the Gospel in April 1835. For some time he passed from church to church preaching for ministers, or as a candidate in vacancies. In March 1836, he was ordained minister of the School Wynd church in Dundee, which was one of the early Secession congregations. The same year, on the 23rd of November, he married Margaret Valentine, who proved throughout his life an admirable help-meet.

He was a stalwart man. His erect figure, and massive head, the bold lustre of his eyes, and the sharp intellectual expression of his countenance, at once gave a striking impression of strength. He was a man of great energy, and marked ability. His intellectual faculties

[35] Pp. 389-390.

were naturally strong; yet his analytic power was not very remarkable. Perhaps, his position and the circumstances of his life were unfavourable to the development of the analytic side of the mind, while his feelings, sentiments, and emotions were exceedingly strong, and his sympathies wide and varied. His mind was impulsive and fervid. In the pulpit he delivered his sermons with great energy and vehemence, and soon became a popular preacher. He was also much esteemed as a popular lecturer, and his service was often solicited in different quarters of Scotland and beyond it. Between the years 1839-48 he delivered some twenty lectures at the Watt Institution in Dundee, on such varied subjects as "The Relation of Religion to Painting," "The Genius of Byron," "Modern British Literature," and various other themes. His popularity increased and extended, and for many years he was one of the most prominent men of Dundee.

He had an aspiration for distinction and literary fame. His literary activity was wonderful, and embraced a wide variety of subjects. Many of his early efforts first appeared in magazines and newspapers:—In *Edinburgh University Magazine*, *The Dumfries Herald*, *Hogg's Instructor*, *Tait's Magazine*, *British Quarterly Review*, *Eclectic Review*, *The Critic*, *The Scottish Review*, and other periodicals; and at a later stage of his life, he was a large contributor to the columns of the *Dundee Advertiser* and the *People's Friend*. His papers in the above, were chiefly biographical and critical sketches, and reviews of books.

The first portion of his *Gallery of Literary Portraits* was published in 1845, the second in 1849, and the third in 1854; and in 1857 the whole appeared in two volumes. The work consists of biographical and critical sketches, which in the last edition were arranged under five divisions thus:—Poets, French Revolutionists, Novelists, Critics, Miscellaneous Writers, and Sacred Authors. These sketches are vivid and graphic. His *Bards of the Bible* appeared in 1850, and was pretty successful. *The Martyrs, Heroes, and Bards of the Scottish Covenant* was published in 1852, and became the most popular of his works. His *History of a Man* appeared in 1856. This is a rather singular book—mainly autobiographical, but also presenting fictitious elements and sharp criticism. In 1857 his *Christianity and our Era* was published. It is a work of considerable power, and presents his views touching the signs of the "Second Advent of Christ." His Poem entitled *Night*, on which he had spent much labour, appeared in 1867.

From time to time he published a considerable number of his lectures and sermons. He edited a series of the *British Poets;* wrote a *Life of Sir Walter Scott*, published in 1870; a *Life of the Rev. Dr. Wm. Anderson* in 1873; and a *Life of Burns* for the National Edition of the Poet's works, published in 1878. His command of language was copious, and his descriptive power excellent. His style, however, is very unequal, loose, and discursive; yet many vivid, striking, and pathetic passages occur in his writings. His criticism though often telling, and sometimes stinging, is not of the highest character, for the natural bent of his mind hardly permitted him to calmly examine evidence, or estimate all the essential points.

Personally, he was a kind-hearted man. He was ever ready to assist those in whom he saw the buds of genius or talent. His death, which occurred suddenly on the 13th of August 1878, was mourned as a public loss to Scotland.

Dr. John Brown, a son of Professor Brown of the U. P. Church, was a medical practitioner in Edinburgh. In 1858 he published a volume entitled *Horæ Subsecivæ*, consisting of essays on Locke and Sydenham; *Rab and his Friends*, and other papers; and in 1861 he issued a second series of sketches of a similar character. These volumes are exceedingly interesting.

William Minto was born at Nether Auchentoul, in the parish of Alford, Aberdeenshire, on the 10th of October, 1845. He was educated at the parish schools of Alford and Tough, and subsequently at the Gordon Schools in Huntly, under the Rev. John Macdonald, who trained him in classics. He entered the University of Aberdeen in 1861, where he had a very distinguished career. In 1865 he graduated with highest honours in classics, second in mental philosophy, and second in mathematics; he also gained the Ferguson Scholarship for classics. In the summer of 1866 he went to Merton College, Oxford, and obtained an exhibition of £80, but he left Oxford in the end of the year and returned to Scotland. For a short time he acted as assistant to Mr. Thomson, Professor of Natural Philosophy in the University of Aberdeen, and afterward as Professor Bain's assistant in teaching the English class. In 1872 his volume, entitled *A Manual of English Prose Literature* appeared, and the same year he was appointed Examiner in Mental Philosophy in the University of Aberdeen.

In 1873 he went to London, obtained an appointment on the staff of the *Examiner*, and engaged in literary work. The following year

he became editor of this paper, but it ceased to be issued in 1880. Minto then entered warmly into political writing upon the controversy of the time for the columns of the *Daily News* and the *Pall Mall Gazette*. He worked assiduously. Besides writing for newspapers, his interesting volume, *Characteristics of English Poets*, was published in 1874, and his volume on *Defoe* in the "English Men of Letters Series in 1879." He contributed twenty-six articles to the ninth edition of the *Encyclopædia Britannica*, which are mainly of a biographical and critical character. He also contributed a considerable number of articles on various subjects to the *Fortnightly Review*, *The Nineteenth Century*, *Blackwood's Magazine*, and other periodicals.

Upon the retirement of Dr. Bain from the Chair of Logic and English Literature in the University of Aberdeen in 1880, Minto was appointed his successor. He earnestly devoted attention to the subjects assigned to his chair, and proved in every respect an excellent teacher. His manner and tact won the affection of the students, and his faculty of interesting and instructing them was characteristic and thoroughly successful. He held the Chair for thirteen years, and took his share in the business of the Senatus and the University. He took a keen interest in educational matters, and frequently delivered lectures outside the University. Under the auspices of the Local Examination Committee of the Senatus Academicus, he delivered a course of lectures in the Music Hall of Aberdeen, on "The Literature of the Georgian Era," in which he treated the writings of the poets and novelists of the eighteenth century, and the early part of the nineteenth.[36]

He was always a hard worker. As stated in a preceding chapter, he wrote three novels. In 1887 he edited a complete edition of Sir Walter Scott's *Poems*. He edited the *Autobiographical Notes of the Life of William B. Scott* (a painter and writer) which was published in 1892; and is a work of much interest and value. He had just corrected the last proofs of his volume on Logic—Inductive and Deductive, before his death. He had been in weak health for some months and confined to his house, but his mind continued active and hopeful to the last. He died on the 1st of March 1893, in the forty-eighth year of his age.

John Veitch was born in Peebles on the 29th of October, 1829. He was educated at the University of Edinburgh, where he came

[36] These "Lectures" were edited by Professor Knight, with a biographical introduction, and published in 1894.

under the influence of Sir William Hamilton, and was a distinguished student. In 1855 he was appointed assistant to Hamilton; and he held this post under Professor Campbell Fraser until 1860, when he was elected Professor of Logic, Rhetoric, and Metaphysics in the University of St. Andrews. In 1864 he was appointed to the Chair of Logic and Rhetoric in the University of Glasgow, which he filled with much credit for a period of thirty years. He died in September 1894.

His writings cover a varied range of topics. In conjunction with Mr. H. L. Mansel, he edited Sir William Hamilton's *Lectures on Metaphysics and Logic*—an undertaking which entailed much work. He wrote a lengthy *Memoir of Sir William*, which is the standard work on the subject. His translation of the *Method, Meditations and Principles of Descartes*, with an introduction and notes, is a very useful book for students. His *Essay on Lucretius and the Atomic Theory* appeared in 1875, and is a very interesting effort. His *Institutes of Logic* evince a wide and accurate historical knowledge of logical doctrine. In his *Knowing and Being* published in 1889, he touched on metaphysical problems, and criticised some of Hegel's conceptions. His labours, however, in other branches of literature are perhaps more notable. In 1878 his *History and Poetry of the Scottish Borders* appeared, and is a valuable and interesting contribution to this branch of literature. A second edition has been issued. His work entitled *The Feeling for Nature in Scottish Poetry* published in 1887, is pervaded by fine feeling and an elevated tone of expression. He had a poetic aspiration and feeling, and wrote several poems—*The Tweed, Merlin*, and others. His mind presented a characteristic combination of philosophic insight and poetic fervour.

John Stuart Blackie was born in Glasgow on the 28th of July, 1809. In 1812 his father, who was a banker, removed to Aberdeen to manage the branch of the Commercial Bank of Scotland. At the age of twelve he entered Marischal College, where he attended classes for three years, and subsequently he studied at Edinburgh University. In 1829 he proceeded to Germany, and pursued his studies at Gottingen and Berlin, and finally in Italy. On returning to Scotland, he studied law, and was called to the Scottish Bar in 1834; but it appears that he never practiced, his talents were ill-suited for the profession. For some years he was engaged in writing articles for periodicals. In 1841 he was appointed to the Chair of Humanity in Marischal College, Aberdeen, and he ardently devoted his attention

to the work. In 1852 he was appointed Professor of Greek in the University of Edinburgh. He held this Chair for thirty years, resigning it in 1882.

Blackie was a man of remarkable talents, and considerable culture associated with keen feelings and wide sympathies. These were combined in his peculiar personality with many comic eccentricities, which sharply distinguished him from all his contemporaries. He was very energetic outside the University, and delivered popular lectures in different quarters of the country, which were instructive and always highly amusing, calling forth applause and roars of laughter. He took a deep interest in the Highlands, and was a warm friend of the crofters, advocating their cause with much enthusiasm. It was mainly by his exertions that a Celtic Chair was established in Edinburgh University. He died at Edinburgh on the 2nd of March, 1895.

His energy was great. A noted traveller, he embraced every opportunity of observing men and things. A most versatile writer, he delivered his views on many subjects: comprising morals, religion, and political philosophy, songs, ballads, poetry, Gaelic literature, and translations. The following include his more important works—A metrical translation of Goethe's *Faust* published in 1834, of which a second edition with emendations was issued; A translation of the *Lyrical Dramas of Æschylus in English verse* published in 1850, in two volumes; *Songs and Legends of Ancient Greece* appeared in 1857; *Homer and the Iliad,* in four volumes, containing a translation of the Iliad in ballad measure, dissertations and notes, published in 1866. *Four Phases of Morals,* as represented by Socrates, Aristotle, Christianity, and Utilitarianism—a series of lectures; *Natural History of Atheism,* issued in 1877, and intended to be a defence of theism against the modern tendencies of speculation; *Self-Culture, Intellectual, Physical, and Moral.* This work was one of his most successful efforts, many editions of it having been issued both in Britain and America. He was a great admirer and lover of Scottish songs and ballads, and was himself a writer of songs and verse. In 1872 his *Lays of the Highlands* appeared, in which there is vivid and effective writing, and considerable artistic combination. His *Songs of Religion and Life* was issued in 1876, and shows clearly that he was not a creed-limited devotee, but rather a worshipper in the great and glorious universe. *Altavona—Fact and Fiction from my Life in the Highlands* was published in 1882, and is

an interesting volume. His *Scottish Song: its wealth, wisdom and social significance,* issued in 1889, is an excellent book. He wrote a *Life of Burns,* and a number of other works.

The chief characteristics of Professor Blackie's style are freshness, cheerfulness, touches of pathos, comic turns, and wit. His main philosophical idea was founded upon Aristotle's doctrine that "all extremes are wrong." This was a special feature in his political opinions.

In the department of travels and exploration, Scotland has contributed her share, as the names of Bruce, Mungo Park, Livingstone, and others testify.

James Bruce was born at Kinnaird House, in Stirlingshire, in 1730. He was intended for the legal profession; but he was averse to the irksome study of law, and commenced business as a wine-merchant in London. Having visited Spain and Portugal, his attention was attracted to the architectural ruins and tales of the Moorish dominion; he earnestly devoted himself to the study of Eastern antiquities and languages. When he returned to England, it was proposed that he should make a journey to Barbary, and he was appointed to the consulship of Algiers. He left England and arrived at Algiers in 1762. Bruce spent six years at Algiers and in various travels, and having surveyed and sketched the ruins of Palmyra and Baalbec, he reached Alexandria in 1768. He then proceeded to Cairo, embarked on the Nile, and arrived at Gondar, the capital of Abyssinia. After a short stay there, he started for the sources of Bahr-el-Azrek, under the impression that this was the main branch of the Nile. At length the spot was pointed out to him by his guide, a hillock of green sod in the middle of a watery plain. The king of Abyssinia conferred high personal distinctions on Bruce. Returning through the great deserts of Nubia to Egypt, he encountered extreme hardships and dangers from the sand-storms and simoom of the desert.

After his return home, some parts of the narrative of his travels reached the public, and were much ridiculed and discredited. Even the sage Johnson doubted whether Bruce had ever been in Abyssinia! A complete account of his travels was published in 1790, in five volumes. But his statements were still deemed a fitting theme for the sneers and lampoons of the critics and wits of the time; and though Bruce felt these attacks keenly, he was an honourable and

proud-spirited man, and scorned to reply to such impeachments of his veracity. He died in 1804.

A second and third edition of his travels were published within eight years after his death. The general accuracy of his work, and the correctness of his drawings and maps, have long ago been confirmed from many different quarters. His style is prolix, but sometimes animated.

Mungo Park was born at Fowlshiels, in the vicinity of Stirling, in 1771. He studied for the medical profession; and, under the auspices of the African Association, formed in 1778 for the purpose of promoting discovery in the interior of Africa, he embarked in May, 1795. On the 21st of June he arrived at Jillifree, on the banks of the Gambia. Thence he proceeded towards the kingdom of Bambarra, and there he saw the chief object of his mission, the river Niger, flowing towards the east. Park's narrative of his journey—the various incidents, the sufferings which he encountered, his captivity among the Moors, and the manners, customs, and trade of the inhabitants, are all intensely interesting. He returned to England in the end of the year 1797; and, in 1799, his travels were published. His style is marked by simplicity, clearness, and fine moral feeling.

But his active mind and spirit was not satisfied, and he longed to renew his travels. He again sailed from England, arriving at Goree in the end of March, 1805. The expedition, which at first consisted of forty-five men, but now reduced to seven, was unfortunate. At Sansanding, he built a boat to continue his voyage down the river, and entered it on the 17th of November, 1805, resolved to discover the termination of the Niger or to perish in the attempt. After the party had sailed several days, on passing a rocky part of the river named Boussa, the natives attacked them, and Park himself and one of his companions were drowned while attempting to escape by swimming. His letters and journals had been sent to Gambia before embarking on the fatal voyage, and an account of the journey, compiled from these, was published in 1815.

The exploration of the interior of Africa long continued to be an object of adventurous and worthy ambition, and a number of men have spent the better part of their lives in such undertakings. Our countryman, David Livingstone, as a missionary and an explorer of Africa, takes a high rank. He was a man inured to hard labour from his youth, and his great work in Africa, his noble and well-considered efforts to enlighten and civilise the natives of the coun-

tries which he visited, are unrivalled in the records of travellers, and will still be fresh in the minds of many of the present generation.

Livingstone's labours in Africa fall naturally into three periods. The first, extending from 1841 to 1857, in which he worked in Southern Africa as a missionary, and made various expeditions into the interior of the country. Having returned home, his *Researches in South Africa* were published in 1857, and is a deeply interesting volume. It describes his long and often perilous journeys, and contains much original information touching the natives, the geography, botany, and natural products of Africa.

The second period extends from 1858 to 1864: early in the former year he set out on his second important mission. In May he had reached the mouth of the Zambesi. In January the following year he explored the river and valley of the Shire, where a white man had never before been seen. He proceeded up the Shire some two hundred miles, till stopped by the Murchison Falls. He found the Shire valley fertile and cultivated. By an overland march of twenty days from Shire, in September, 1860, he discovered the great lake of Nyassa. He afterwards revisited it, and concluded that the lake was about two hundred miles long and forty broad. The country was studded with villages, and the natives of the Shire and Nyassa valleys had good iron, and were manufacturers as well as agriculturists. Livingstone returned to England in 1864, and recorded his explorations in a *Narrative of an Expedition to the Zambesi and its tributaries, and of the discovery of the lakes Sherwa and Nyassa.*

In 1866, Livingstone started on his third and last expedition. In March he left Zanzibar and struck up the country towards lake Nyassa. For seven years he bravely prosecuted his travels and labours in Africa, suffering many hardships and dangers. At last, worn out, he died on the 1st of May, 1873. He had before expressed a wish to die in the still forest, "and no hand ever disturb my bones." But so beloved was he when alive, that his body was rudely embalmed by his faithful followers, and carried by them hundreds of miles to Zanzibar, whence it was conveyed to England and interred in Westminster Abbey, on the 18th of April, 1874. Thus lived and died Dr. Livingstone, a man equally remarkable for his great intelligence and sagacity, his warm-hearted and wide sympathies, which were admirably exerted for the elevation and good of the natives of Africa; his bravery, fortitude, and endurance were wonderful, and his strength of will and perseverance unmatched.

He was the first who called public attention to the suffering and horrors of the East African slave trade, which he continued to expose throughout his life; and his whole career was a noble struggle for the enlightenment, improvement, and civilisation of the natives of Africa.

Before closing this chapter, it seems requisite to give a brief account of the rise of newspapers and periodical literature. During Cromwell's rule in Scotland there were some reprints of English news published in Edinburgh; after the Restoration two attempts were made to issue newspapers, but neither of them continued long. The first regular Scottish newspaper was the *Edinburgh Gazette*, established in 1699. The first Glasgow newspaper, called the *Glasgow Courant*, containing the occurrences both at home and abroad, appeared on the 14th of November, 1715; it was published thrice a week, but only lived about seven months. The second newspaper published in Glasgow appeared on the 20th of July, 1741, under the name of the *Glasgow Journal*, and it continued to be issued for upwards of half a century. On the 14th of October, 1745, the first number of the second *Glasgow Courant* was issued; and in 1783 the *Glasgow Advertiser* first appeared.[37] The *Aberdeen Journal* appeared in 1748. Newspapers continued slowly to increase in number till the end of the century; but it is chiefly within the last fifty years, and especially since the abolition of the stamp duty in 1855, and the duty on paper in 1861, that the newspaper press has attained its great development.

The class of what may be called literary periodical papers, as distinguished from newspapers, began to appear in Scotland early in the eighteenth century. In 1711, a paper of this description was published in Edinburgh, and continued through thirty weekly numbers, under the name of *The Tatler*. Soon after this a number of periodical papers appeared, and disappeared again, but few of them had much merit. *The Echo* ran its weekly numbers from 1729 to 1733; *The Review* appeared in 1737; and *The Letters of the Critical Club* in 1738; *The Mirror and Lounger*, a periodical published in Edinburgh, attained a higher reputation. In January, 1739, the first number of *The Scots Magazine* appeared, and was continued till 1826. It contains a store of events, facts, interesting pictures of manners, characters, and incidents, extending over a period of well-nigh a century.

[37] Macgregor's *History of Glasgow*, pp. 295, 335, 336, 386.

I have already referred to the establishment of the *Edinburgh Review*, and the influence which it wielded. *Blackwood's Magazine* first appeared in 1817, and *Tait's Magazine* in 1833; and about the latter date the Messrs. Chambers began to issue their instructive and cheap periodical publications, many of which attained a wide circulation. There are now magazines devoted to almost every department of knowledge, and to nearly every variety of opinion and doctrine; even every party and interest deem it necessary to be represented in the periodical press.

The first edition of the *Encyclopædia Britannica* was published in 1771, in four volumes, under the editorship of Mr. William Smellie. The second edition of this work was begun in 1776, and it extended to ten volumes, embracing biography and history. The third edition, enlarged to eighteen volumes, was completed in 1797; and which contained many original treatises on physical science, and able and valuable articles by Professor Robison, Dr. Doig, and the ingenious editor of the later volumes—the Rev. Dr. George Gleig. Two supplementary volumes were afterwards added to the work. The fourth edition, under the editorship of Dr. James Miller, was finished in 1810, enriched by several scientific treatises and many valuable articles by William Wallace, professor of mathematics in the University of Edinburgh. The next two editions were nearly nominal reprints; but the supplement projected by Mr. Constable contained contributions from many of the most emiment writers of the time—Sir Walter Scott, Jeffrey, James Mill, Dr. Thomas Young, Playfair, Leslie, Mackintosh, Dugald Stewart,[37] M. Arago, M. Biot, and others. The seventh edition under the editorship of Mr. Napier, ably assisted by Dr. James Browne, was completed in 1842, in twenty-one volumes; and contained many new and valuable articles, along with the supplements mentioned above. The eighth edition of this great national work was completed in 1861; and the ninth edition, under the editorship of accomplished and learned gentlemen, was completed in 1888.

The *Edinburgh Encyclopædia*, under the editorship of Sir David

[37] Large sums were paid to some of these writers for their Dissertations and Articles. Dugald Stewart was to receive £1000 for his *Dissertation on Metaphysical Philosophy*, and Playfair for one on the *Progress of Natural Philosophy* £500; Stewart actually received £1600, and Playfair would have received an additional £500 had he lived to complete his Dissertation. Such large sums had never before been given for literary work in Scotland.

Brewster, was commenced in 1808, and completed in 1830, in eighteen quarto volumes. The scientific portions of this work are valuable, and were long highly appreciated.

The first edition of *Chambers' Cyclopædia of English Literature* was published in 1843; and several revised and enlarged editions have since been issued, in two large volumes. It is a useful and generally accurate work. The later editions had the benefit of the extensive information and the fine literary taste of the late Mr. Robert Carruthers, of Inverness, who thoroughly revised the whole work. The Messrs. Chambers have also published an *Encyclopædia*, which is very highly esteemed as a work of reference. A new and revised edition of this excellent work has just been completed.

So much for the modern literature of Scotland.

CHAPTER XLIV.

Progress of Science in the Eighteenth and Nineteenth Centuries.

Section I.

Physical Science.

IT should be understood that the aim of this chapter is not to present a history of science, but chiefly to indicate what Scotland has contributed to the science of the period, and to show the importance of science as a factor in advancing civilisation. It will, therefore, in the first place, touch on the significance and progress of mathematical science; in the second, on physical science, or natural philosophy; and in the third, on mechanical science, or science in relation to its practical application.

From an early period various conceptions of the universe have been entertained; even Newton's conception of it and his system founded on the theory of gravitation are not quite satisfactory. Hence his followers for a long time mainly occupied themselves in defending and explaining his system; they were loth to recognise that either his method or system was susceptible of improvement or extension—they adhered to his conclusions with extreme tenacity and superstitious veneration. While, in other parts of Europe, Descartes' theory of the universe held the field, the earliest recorded recognition of Newton's principles in France was in a memoir by Lonville, which appeared in a volume of the *Academy of Sciences* for the year 1720; and the first French astronomer who ventured on a defence of the theory of gravitation was Maupertius, in his work on the figures of the celestial bodies, published in 1732. He compared the theories of Descartes and Newton, and came to a conclusion in favour of the latter. It was Voltaire, however, that really diffused a knowledge of Newton's system in France, by the publication, in 1738, of his clear exposition of Newton's discoveries in optics and astronomy. Henceforth in France the Newtonian system prevailed over the theory of Descartes.

The controversy touching the priority of the invention of the calculus between Newton and Leibnitz was an unfortunate affair, as

it arose from trivial incidents. In short, from the first Leibnitz admitted Newton's priority in forming the conception of the calculus; but he maintained, what was doubtless true, his own originality in the invention of the differential calculus. This branch of mathematical analysis was not much advanced by Newton and the English geometers of his time; as Newton himself was fond of geometrical forms and the synthetical method of statement. His treatise on *Fluxions* was not published till after his death in 1736. When, however, it became known that the differential calculus was rapidly circulating on the Continent—and so little was Newton's method known, that Leibnitz was regarded throughout Europe as its original inventor—the followers of Newton began to feel that this impression was unjust towards their great teacher, and hence the bitterness of the controversy which ensued. The result was a wide alienation between the English and foreign mathematicians, which had a pernicious effect on science. "Each party became the exclusive supporters of the two great luminaries of their respective countries. The British mathematicians, in particular, adhered with the most rigid pertinacity to the very letter of Newton's methods; and were, with few exceptions, completely ignorant both of the original investigations of the other party, and of the improvements upon them which were being rapidly introduced.

"The difference in name and notation between the two methods, though in itself a trivial circumstance, was yet far from unimportant in some of the consequences which may be fairly traced to it. It tended in some measure to foster and increase the dissension between the two schools, and their ignorance of each other's researches; while the diversity itself between the two methods, though in reality little more than nominal, became also a topic of no small dispute and controversy. But much as these differences were on all grounds to be lamented, the loss in point of scientific advantages, it must with shame be confessed, were almost entirely on the side of Britain." [1]

If we reflect upon the past three centuries and ask what were the most requisite means of aiding men in their investigation of nature and the explanation of the phenomena of the universe, the answer must be mathematical science. In astronomy and in other branches of physical science, mathematics are indispensable; for as the universe exists in space and time—the two concepts which

[1] Powell's *History of the Physical and Mathematical Sciences*, p. 363. 1834.

encircle all things—so it is a universal truth, that mathematics are not only the prime requisites in physical science, but also essential elements in navigation, engineering, shipbuilding, architecture, and in many other arts.

In the early part of the eighteenth century Scotland produced one eminent mathematician—Colin Maclaurin [2]—and several others of lesser note. He was a native of Kilmodan, in Argyleshire, a son of a clergyman, was educated at the University of Glasgow, and early manifested an aptness for mathematics. In 1717, before he had attained his twentieth year, he was elected, after a ten days' competition, Professor of Mathematics in Marischal College, Aberdeen; but in 1725, he was appointed assistant and successor to Dr. Gregory in the Chair of Mathematics in the University of Edinburgh. It is recorded that he was an able and successful instructor, and that in his public teaching he clearly explained the application of his science to purposes of utility and the perfecting of the mechanical arts.[3]

[2] Born in 1698; died in 1746.

[3] He soon became the leading spirit in the University of Edinburgh, and the celebrity which the Chair of Mathematics had attained under the Gregories was admirably sustained and even extended by him. In the *Scots Magazine*, in 1741, a full programme of Maclaurin's courses of academical instruction is given as follows:—"He gave every year three courses, and sometimes a fourth, upon such of the abtruse parts of the science as were not explained in the former three. The first course contained—Demonstrations of the ground of Vulgar and Decimal Arithmetic; six books of Euclid; Plane Trigonometry and use of the tables of Logarithms, Sines, etc.; Surveying, Fortification, and other practical parts; the Elements of Algebra; and a lecture on Geography once a fortnight.

"The second course consisted of—Algebra; the Theory and Mensuration of Solids; Spherical Trigonometry, the doctrine of the Sphere, Dialling, and other practical parts; Conic Sections, with the theory of Gunnery; the Elements of Astronomy and Optics. He began the third course with Perspective; then treated more fully of Astronomy and Optics. After this he prelected on Sir Isaac Newton's Principia, and explained the direct and inverse method of Fluxions. At a separate hour he gave a course of Experimental Philosophy, beginning about the middle of December, which continued thrice every week till the beginning of April; and at proper hours of the night he described the constellations, and showed the planets by telescopes of various kinds." This was a comprehensive course of teaching. He also exerted himself to the utmost to provide an Observatory for the instruction of students in the University of Edinburgh, and would have been successful but for his early death. Although the foundation of an Observatory was laid in Edinburgh by the Town Council

His works are these :—(1) *Geometrica Organica ;* (2) *A Complete System of Fluxions ;* (3) *Treatise on Algebra ;* (4) *Account of Sir Isaac Newton's Philosophy ;* (5) Various elegant and ingenious papers published in the *Transactions of the Royal Society ;* and (6) *A Memoir on the Tides.*

In connection with his *Memoir on the Tides*, written in 1740, he gained equal honour with Euler and Daniel Bernouilli, a famous Italian mathematician, as the prize of the French Academy of Sciences was equally divided among them. All the three adopted the principle of gravitation as the basis on which they attempted to explain the phenomena of the tides ; and the results which they arrived at, presumed the earth to be at rest and the waters of the ocean also, and at every moment in a state of equilibrium between the force of gravity tending to the earth's centre, and the lesser forces tending towards the sun and moon. This view is known as the equilibrium theory ; and though it is far from perfect, it correctly indicates a part of the phenomena of the tides, notwithstanding that the problem of the tides is a dynamical and not a statical one. Subsequently the important subject of the tides was treated at great length by Laplace, but unfortunately his tidal theory was so profound that very few men have ever attempted to master its difficulties. The late Mr. Airy, the Astronomer Royal, however, gave to the public a connected and clear view of it.[4]

and Senatus, on the 25th June, 1776, it was not until 1834 that the Observatory was rendered available for the practical instruction of students of the University.

It has been said that in "Maclaurin's time the teaching of mathematics reached a point which it cannot be said to have yet surpassed."—Sir A. Grant's *Story of the University of Edinburgh*, Vol. II., p. 299.

[4] Mr. Airy summed up the merits of Laplace's theory thus : —"If, putting from our thoughts the details of the investigation, we consider the general plan and objects, we must allow it to be one of the most splendid works of the greatest mathematician of the past age. To appreciate this, the reader must consider—first, the boldness of the writer who, having a clear understanding of the gross imperfection of the methods of his predecessors, had also the courage deliberately to take up the problem on grounds fundamentally correct, however it might be limited by suppositions afterwards introduced ; secondly, the general difficulty of treating the motions of fluids ; thirdly, the peculiar difficulty of treating the motions when the fluids cover an area which is not plane but convex ; and fourthly, the sagacity of perceiving that it was necessary to consider the earth as a revolving body, and the skill of directly introducing this consideration. The last point alone, in our opinion, gives a greater claim for reputation than

Maclaurin also entered the arena in defence of the Fluxional system, which was boldly attacked by Berkeley, the famous Idealist, in *The Analyst*, published in 1734. Berkeley argued that the fundamental idea of supposing a finite ratio to exist between terms absolutely evanescent is completely absurd and unintelligible, and with biting sarcasm called these ratios "the ghosts of departed quantities." Dr. Irwin produced a reply, and several others appeared on both sides; but Maclaurin and Robins made the most satisfactory defence of the principle of limiting ratios. Still the point was not thoroughly cleared up, till D'Alembert showed the real application of the principle of limits in the simplest form; and at last Lagrange, in his theory of Functions, discarded all idea of infinitesimals and limits, and reduced the whole to a simple algebraical investigation, by the development of functions in series.

Maclaurin's method and style in the solution of problems were greatly admired. He showed in his applications of mathematics to physical problems a rare power of seizing the really important points amidst a mass of irrelevant details. In private life he was one of the best and worthiest of men.

James Stirling,[5] another distinguished Scottish mathematician, was a native of Stirlingshire. He was educated at the University of Glasgow, and afterwards on Snell's foundation at Oxford. While studying at Oxford, he printed, in 1717, a small tract on "lines of the third order, with new solutions of some difficult problems by the fluxionary calculus." Subsequently he accepted an invitation to settle at Venice, where he remained for several years and taught mathematics.

Having returned home, he opened a mathematical school on Tower Hill, and maintained a correspondence with philosophers at home and abroad. In 1730, he published his well-known work on *The Differential Method and Series*. After toiling in his school for several years,

the boasted explanation of the long inequality of Jupiter and Saturn."—*Encyclopœdia Metroa*, "Tides and Waves," Art. 117; compare Grant's *History of Astronomy*, p. 71, *et seq.*

After Laplace, the theory of the tides has been treated by Dr. Thomas Young; and Dr. Whewell and Sir John Lubbock were engaged for many years in determinating the laws of the tides by observation, and in tracing their connection with the positions of the sun and moon. The chief results of their researches were published from time to time in a series of papers, in the volumes of the *Royal Society*.

[5] Born about the end of the seventeenth century, and died in 1772.

he was induced to leave London, and undertake the direction of the mines at Leadhills in Scotland. In that elevated region, near Sanquhar, he resided during the rest of his life; and by his skill, intelligence, and energy, greatly improved the operations of extracting the lead ore. He now held a good position; but his high mathematical fame would have secured to him the honour of succeeding Maclaurin in the chair of mathematics in Edinburgh, in 1746, if he had not at that unhappy time been tainted with Jacobite opinions.[6] In his later years he seems to have confined himself to practical concerns.

Matthew Stewart was elected to the vacant chair of mathematics in Edinburgh. He was a mathematician of note in the department of geometry; and is the author of *Tracts, Physical and Mathematical.* Robert Simson, who long held the chair of mathematics in the University of Glasgow, was a distinguished geometer. The names of Playfair and Leslie may also be mentioned as distinguished professors and learned mathematicians.

Passing to physical science, it is necessary to observe that in the eighteenth century the several branches of this department were not then so clearly distinguished from each other as they are now. The subject of heat was treated as a branch of chemistry; while chemistry itself was usually conceived as a mere appendage to medicine. Dr. Cullen was the first in Britain who assigned to chemistry its proper place as a science.

Dr. Black, the eminent professor of chemistry, and the discoverer of latent heat, was born in France, in 1728, where his father was then engaged in the wine trade. He received the rudiments of his education at Belfast; and in 1746, he entered the University of Glasgow, and under Dr. Cullen, was instructed in the science of chemistry, in which he showed much aptitude. As he intended to follow the medical profession, he went to Edinburgh to complete his studies, and graduated in 1754. Before this, he had prosecuted a series of chemical experiments touching the causticity of many earthy bodies, which resulted in his first discovery of the existence of fixed air or carbonic acid gas as an essential constituent of marble and other solids, along with a train of important consequences.

In 1755, Dr. Cullen removed to Edinburgh, and in 1756, Dr. Black succeeded him as professor of medicine and chemistry in the University of Glasgow. At this time he directed special attention

[6] Leslie's *Dis. Ency. Brit.*

to the subject of heat. He had discovered the phenomenon of "Latent Heat" at least as early as 1758, and taught the doctrine in his lectures at Glasgow.[7] He was the first who formed distinct ideas on the subject.

He deduced the discovery of latent heat from experiments showing that ice in being melted absorbs 140° of heat, which becomes latent in the water produced, thus :—"The melting ice receives heat very fast, but the only effect of this heat is to change it into water, which is not in the least sensibly warmer than the ice was before. A thermometer, applied to the drops or small streams of water, immediately as it comes from the melting ice, will point to the same degree as when it is applied to the ice itself. . . . A great quantity, therefore, of the heat, or of the matter of heat, which enters into the melting ice, produces no other effect but to give it fluidity, without augmenting its sensible heat; it appears to be absorbed and concealed within the water, so as not to be discoverable by the application of a thermometer."[8] By comparing the time required to change the ice from 28° to 32°, with the subsequent time required for its complete liquefaction, he found that it absorbed about 140 times as much heat as would raise its temperature one degree; and he also found that one pound of ice, when mixed with one pound of water, was just melted, but not raised in its temperature above 32°. So he concluded that water differed from ice of the same temperature by containing a great quantity of heat or the cause of heat, which would not quit it for another colder body, nor go into the liquor of the thermometer and expand it. This phenomenon, considered as the possible cause of heat, was latent, and Black accordingly called it "latent heat."[9]

This discovery was connected with his experiments and researches on boiling and evaporation, which ultimately resulted in laying the foundation of the practical application of steam. He concluded that a great quantity of heat becomes latent during the conversion of

[7] Dr. Black himself, writing in 1780, said :—"I began to give the doctrine of latent heat in my lectures at Glasgow, in the winter 1757-58, which I believe was the first winter of my lecturing there, or, if I did not give it that winter, I certainly gave it in 1758-59, and I have delivered it every year since that time in my winter lectures, which I continued to give at Glasgow until winter 1766-67, when I began to lecture in Edinburgh."—Letter of Dr. Black to Mr. Watt, 1708, quoted by Muirhead in his *Life of James Watt*, pp. 309-310.

[8] Black's *Lectures on the Elements of Chemistry*, Vol. I., p. 119. 1803.

[9] Black's *Lectures on the Elements of Chemistry*, Vol. I., pp. 120-132.

water into vapour or steam; and he endeavoured to determine this quantity by experiment. He found that the latent heat in steam, which balanced the pressure of the atmosphere, was upwards of 800°. He also directed Dr. Irvine of Glasgow, one of his own pupils, to make an experiment for measuring the heat actually extricated from steam during its condensation in the refrigeratory of a still, which was found to be 774°. A few weeks after, Mr. James Watt made similar experiments on steam with a similar still; and the medium result of these trials gave 825°.[10] It may be observed that, in these

[10] *Ibid.*, pp. 144-174. I deem it of interest to give a few brief quotations from Dr. Black's lectures on the latent heat of steam, to indicate his views. "I immediately set about boiling off small quantities of water, and I found that it was accomplished in times very nearly proportional to the quantities, even although the fire was sensibly irregular.

"My conjecture, when put into form, was to this purpose :—I imagined that during the boiling, heat is absorbed by the water, and enters into the composition of the vapour produced from it, in the same manner as it is absorbed by ice in melting, and enters into the composition of the produced water. And, as the ostensible effect of the heat, in this last case, consists not in warming the surrounding bodies, but in rendering the ice fluid, so in the case of boiling, the heat absorbed does not warm surrounding bodies, but converts the water into vapour. In both cases, considered as the cause of warmth, we do not perceive its presence: it is concealed, or latent, and I give it the name of Latent Heat. . . .

"I put into a very strong phial about as much water as half filled it, and I corked it close. The phial was placed in a sand-pot, which was gradually heated, until the sand and the phial were several degrees above the common vaporific point of water. I was curious to know what would be the effect of suddenly removing the pressure of the air, which is well known to prevent water from boiling. The water boiled a very short while, but the ebullition gradually decreased, till it was almost insensible. Here the formation of more vapour was opposed by a very strong pressure proceeding from the quantity of vapour already accumulated and confined in the upper part of the phial, and from the increased elasticity of this vapour, by the increase of its heat. When matters were in this state, I drew the cork. Now, according to the common opinion of the formation of vapour by heat, it was to be expected that the whole of the water would suddenly assume the vaporous form, because it was all heated above the vaporific point. But I was beginning by this time to expect a different event, because I could not see whence the heat was to be supplied, which the water must contain when in the form of vapour. Accordingly, it happened as I expected: a portion only of the water was converted into vapour, which rushed out of the phial with a considerable explosion, carrying along with it some drops of water. But, what was most interesting to me in this experiment, was, that the heat of what remained was reduced in an instant to the ordinary boiling point. Here, therefore, it was evident that all that excess of heat which

early experiments, the latent heat of steam was considerably underrated.

Dr. Black also contributed to advance the knowledge of Specific Heat; but he chiefly left the development of this branch in the hands of his pupil Dr. Irvine, who was professor of chemistry in the University of Glasgow from 1769 to 1786, and to Mr. Watt, for both of whom he had the greatest respect.

In 1766, Dr. Black was appointed professor of chemistry in the University of Ediuburgh, in succession to Dr. Cullen; and he filled this chair with much credit to himself and advantage to the University, until his death in 1799. He was a very successful instructor; his lectures in the class-room were described by those who heard them as inimitable, and so interesting that they never failed to rivet attention.[11] Thus his influence on the progress and the diffusion of science by his teaching for the long period of forty-three years, and his intercourse with society, was great and highly beneficial to his country and to the world.

Another branch of the science of heat was taken up by Sir John

the water had contained above the boiling point, was spent in converting only a portion of it into vapour. This is plainly inconsistent with the common opinion, that nothing more is necessary for water's existing in a vaporous form under the pressure of the atmosphere, than its being raised to a certain temperature. . . .

"This experiment was afterwards made by my friend Mr. Watt, in a very satisfactory manner. His studies for the improvement of the steam-engine gave him a great interest in everything relating to the production of steam."—Pp. 159-160.

In 1781, Dr. Black said to the students of his class:—"I think it sufficient to inform you that Mr. Watt, in the course of his studies on the steam-engine, has made all the necessary experiments with the most scrupulous care, knowing that the improvement of that noble engine must depend entirely on an exact knowledge of the procedure of nature in the formation and condensation of steam. Mr. Watt informs me that he has observed as exact coincidence between the heat rendered latent in the vapour, and that which emerges from it, as can be desired; and that the heat obtainable from steam, capable of sustaining the ordinary pressure of the atmosphere, is not less than 900° of Fahrenheit's scale, and that it does not exceed 950°."—*Ibid.*, p. 174.

[11] Professor Robson, one of his pupils, and the editor of his lectures, says that Dr. Black endeavoured every year to make his course of lectures more plain, and illustrated them by more examples in the way of experiment. So the students in his class "were not only instructed, but delighted; and he became a favourite lecturer, and many were induced, by the report of his students, to attend his courses."

Leslie;[12] he directed his attention to "Radiant Heat"—heat propagated from hot bodies to sensible distances. Sir John was educated at the University of St. Andrews, and early manifested a bent for mathematical studies. His work on the *Nature and Propagation of Heat*, which appeared in 1804, first brought him into notice; and the following year he was appointed to the chair of mathematics in the University of Edinburgh.

The fact that heat is radiant, passing through space like light, was known at an early period; and various experiments had been made, and some of the phenomena which characterise it indicated; but heat in its radiant form was not systematically investigated till towards the end of the eighteenth century. The band of scientific men then engaged on this subject were Pictet, Prevost, Rumford, and Herschel; the first two were professors in Geneva, and were earlier in the field than Leslie. In 1791, Pictet's work entitled *Essai sur le Feu* appeared, which contains observations on latent and specific heat, and on the power of different surfaces to reflect and absorb it. He showed that radiant heat moves with great velocity. His treatise also embraced observations on hygrometry, on various points of meteorology, and on friction heat. He has the merit of establishing the meteorological observations at the convent of the Great St. Bernard, and thus commenced a series which has proved exceedingly interesting to scientific men.

Prevost is the author of the theory termed the "Movable Equilibrium of Heat." His fundamental idea is that heat is a substance related with bodies of a highly elastic nature, continually given off from them in proportion to their temperature, which may represent the tension of the imaginary elastic fluid. Thus, when the temperature of a body is stationary, it is because it receives by radiation from surrounding bodies exactly as much heat as it parts with in the same way.[13] His views were first published in 1791.

Leslie was an ingenious and able experimenter. But unfortunately he started his researches with some rather dogmatic preconceptions; he had a notion that the pressure of air is essential to the propagation of heat; nevertheless, many of his experiments are interesting and valuable. He used a thermoscopic instrument constructed by himself, which he called the differential thermometer; it is an ingenious modification of the common air thermometer. He showed that the

[12] Born in 1766, and died in 1832.

[13] Dr. Forbes's *Diss. Ency. Brit.*, p. 944. 1856.

radiating or emissive effect of different surfaces varied from 100° to 12°. He also showed by experiment that the radiation of heat from a plane surface proceeds with unequal force in different directions. When the specific heating power of the colorific rays is measured in a direction perpendicular to the surface whence it emanates, it is found to be at a maximum; and at any other angle with the surface, it varies as the sine of the angle. Afterwards this was also found to prevail in the case of light. His experiments to prove that the law of radiation of heat varies inversely as the square of the distance were not quite conclusive.

He considered the influence of colour on the heating of bodies by original experiment; and it was found to be effectual only when the radiations were luminous. He engaged in long and ingenious researches touching the law of cooling bodies, embracing the effects of mass, surface, contact of air, currents of air, the cooling effects of different gases, and of air of different degrees of rarefaction.

Besides his work on heat, his *Dissertation on the Progress of Physical and Mathematical Science*, and the articles on "Cold" and "Meteorology," in the seventh edition of the *Encyclopædia Britannica*, he is the author of *Elements of Natural Philosophy* (left unfinished), a *Treatise on Geometry*, and *Philosophy of Arithmetic*.

He held the mathematical chair from 1805 to 1819, and in the latter year he was appointed to the chair of natural philosophy. He had a large and fine collection of apparatus, as indicated above, and devised many ingenious experiments. He was elected a corresponding member of the Institute of France in 1820; and, on the recommendation of Lord Brougham, he received the honour of knighthood in 1832.

Since Leslie's time the science of heat has been greatly advanced; the dynamical theory of heat has been developed in the present century, and Scotsmen have contributed their share to the definite advancement of this branch of science. But it has been advanced to its present stage by a long list of scientific men. In 1812, Davy enounced that the direct cause of the phenomenon of heat is motion, and that the laws of its communication are precisely the same as the laws of the communication of motion. The researches into the radiation and absorption of heat mainly form the physical basis of Spectrum Analysis, which has greatly extended the power of ascertaining the constituent elements of the celestial bodies, the sun and the fixed stars.

In the researches which ultimately led to these results, several Scotsmen have taken an honourable part. Professor Forbes discovered and demonstrated the polarisation of heat, and thus showed that radiant heat and light are the same. Among others who have contributed to advance Spectrum Analysis, I may mention Professor Stokes, Professor Balfour Stewart, and Sir William Thomson, of the University of Glasgow. Sir William Thomson (now Lord Kelvin) has taught the doctrine that there is sodium vapour in the sun's atmosphere, in his public lectures in the University of Glasgow, since the year 1852.

Interesting conclusions touching the composition of the sun and of some of the stars have been reached :—"When we compare the spectra of different stars with that of the sun, we come to some very curious conclusions. We find four classes of spectra, as a rule, among the different fixed stars which have seemed of importance enough to be separately examined. The first class of spectra are those of white stars. You see an admirable example in Vega, and another in Sirius or the dog-star. All these white stars have the characteristic that they have an almost continuous spectrum with few dark lines crossing it, and these for the most part lines of hydrogen. These stars are in all probability at a considerably higher temperature than the sun. Then you come to the class of yellow stars, of which our sun is an example. In their spectra you have many more dark lines than in those of the white stars, but you have nothing of the nature of nebulous bands crossing the spectrum, such as you find in the third class; still less have you certain curious joins of shaded lines which you have in the fourth class of stars. This classification seems to point out the period of life, or phase of life, of each particular star or sun. When it is first formed, by the impact of enormous quantities of matter coming together by gravitation, you have very nearly continuous spectrum of a glowing white-hot liquid or solid body, or it may be dense gas, the sole, or nearly sole, absorbent being gaseous hydrogen in comparatively small quantity, and the spectrum having therefore few absorption lines. As it gradually cools, more and more of these gases surrounding its glowing surface become absorbent, and so you have a greater number and variety of lines. Then, as it still further cools, you have those nebulous bands which seem to indicate the presence of compound substances; which could not exist in the first two classes, because their temperature is so high as to produce dissociation. Still further

complexity of compounds will be found in the atmosphere of the fourth class." [14]

After the publication of Newton's *Optics* in 1704, the history of this branch of science was almost a blank in Britain, till 1803, when the researches of Dr. Young on the undulatory theory of light appeared; and since the subject has been treated with increasing interest and success.

Sir David Brewster,[15] who attained distinction in this branch of science, and in other fields of intellectual effort, was a native of Jedburgh, He was educated at the University of Edinburgh, and had the advantage of the instruction of Professor Robison, and other eminent teachers who then spread the rays of light with consummate ability. He devoted himself to science; and in 1805, he edited Ferguson's *Lectures on Astronomy;* and, as already mentioned, he commenced the *Edinburgh Encyclopædia* in 1810. His first separate work, *On New Philosophical Instruments*, appeared in 1813, which also contained observations on refractive and dispersive powers. From this date onwards he became a regular contributor to the London Philosophical *Transactions*, and also those of Edinburgh; he commenced the *Edinburgh Philosophical Journal* and the *Edinburgh Journal of Science.* His contributions to scientific societies and journals would fill many volumes. One list of his scientific papers extends to the number of three hundred and fifteen, and the following is only the briefest indication of some of the more important subjects treated in them:—

(1) "The Laws of Polarisation by Reflection and Refraction, and other Quantitative Laws of Phenomena;" (2) "The Discovery of the Polarising Structure induced by Heat and Pressure;" (3) "The Discovery of Crystals with Two Axes of Double Refraction, and many of the Laws of their Phenomena, comprising the Connection of Optical Structure and Crystalline Forms;" (4) "The Laws of Metallic Reflection;" (5) "Experiments on the Absorption of Light."

The more important of his other works are—(1) *A Treatise on the Kaleidoscope*, published in 1819; (2) *A Treatise on Optics*, 1831; (3) *A Treatise on the Microscope;* (4) *A Treatise on the Stereoscope;* (5) an Article on "Magnetism," reprinted from the *Encyclopædia Britannica;* (6) *The Martyrs of Science—Galileo, Tycho Brahe, and Kepler;* (7) *Life*

[14] *Recent Advances in Physical Science*, by P. G. Tait, pp. 230-231.

[15] Born in 1781; died in 1868.

of Sir Isaac Newton; (8) *Letters on Natural Magic;* (9) *More Worlds than One.* He also wrote a *Life of Euler* and edited his Lectures; edited Robison's *System of Mechanical Philosophy*, with a preface and notes, which appeared in 1822, in four large volumes; he also contributed seventy-four articles to the *North British Review.*

This enumeration of his writings, though far from complete, is sufficient to show his great mental energy, and his scientific and literary talents. He was a man of remarkable intellectual resource, his imaginative and elaborative faculties were of a high order, and, for industry and observation he has rarely been surpassed. His style is clear and flowing, he has a copious command of expressive language.

Besides his discoveries of the law of polarisation, of biaxal crystals, of optical mineralogy, and of double refraction by compression, he invented a dioptric apparatus for the illumination of lighthouses, which he described in 1812. In 1820, he endeavoured to get the dioptric system adopted, but failed; at length, however, on the motion of Mr. Hume, a Committee of the House of Commons was appointed to consider the subject; and, in 1836, this system was applied to a Scotch lighthouse, and has since been universally extended. In 1816, he invented the kaleidoscope, which soon became popular over Europe; afterwards, he made an important improvement on the principle of constructing stereoscopes. In the words of Professor Forbes—"Few persons have made with their own eyes so vast a number of independent observations; few have ever observed better, or recorded their observations more faithfully." He was an honour to his country and a benefactor to mankind.

In the interesting science of the earth—geology—Dr. Hutton, in 1788, enounced his theory that the changes in the earth's crust have been mainly caused by the agency of fire; but though his views were ingenious and well argued, they have long ago been superseded by conclusions more in accordance with the observed phenomena. This branch of knowledge has been much investigated in the present century, and several Scotsmen have attained distinction in advancing it.

Sir Charles Lyell[16] was a native of Forfarshire, and studied at Oxford. His *Principles of Geology*, being an attempt to explain the former changes of the earth's surface by a reference to causes now in

[16] Born in 1797; died in 1875.

operation, appeared in 1830-32, in two volumes. He made additions to it, and alterations from time to time, and the eighth edition of the work, thoroughly revised, was published in 1850. Though he recognised new facts, he continued to hold his theory that we may dispense with sudden and general catastrophes, and consider the past and present fluctuations of the organic and inorganic world as forming one continuous and regular series of phenomena.

In 1838, he published his *Elements of Geology*, which was afterwards enlarged to two volumes. He is also the author of *Travels in North America, with Geological Observations on the United States, Canada, and Nova Scotia*, published in 1845. He was twice elected president of the Geological Society, and he received the honour of knighthood in 1848. His style is attractive, easy, and fluent, and his writings were popular. The following is a short specimen of his manner:—

"The analogy, however, of the monuments consulted in geology, and those available in history, extends no further than to one class of historical monuments—those which may be said to be undesignedly commemorative of former events. The canoes, for example, and stone hatchets found in the peat bogs afford an insight into the rude arts and manners of the earliest inhabitants of our island; the buried coin fixes the date of the reign of some Roman emperor; the ancient encampment indicates the districts once occupied by invading armies, and the former method of constructing military defences; the Egyptian mummies throw light on the art of embalming, the rites of sepulture, or the average stature of the human race in ancient Egypt. This class of memorials yields to no other in authenticity, but it constitutes a small part only of the resources on which the historian relies; whereas in geology it forms the only kind of evidence which is at our command. For this reason we must not expect to obtain a full and connected account of any series of events beyond the reach of history. But the testimony of geological monuments, if frequently imperfect, possess at least the advantage of being free from all suspicion of misrepresentation. We may be deceived in the inferences which we draw, in the same manner as we often mistake the nature and import of the phenomena observed in the daily course of nature; but our liability to err is confined to the interpretation, and, if this be correct, our information is certain."

Sir Roderick Murchison,[17] a distinguished geologist, was a native of Ross-shire, and served in the army from 1807 to 1816. He

[17] Born in 1792; died 1871.

directed his attention chiefly to a series of strata in the district bordering on England and Wales, inhabited in early times by the British tribe of the Silures ; and after working four years in classifying the rocks and deposits, he separated them into four formations, and showed that each is characterised by peculiar organic remains : and, in 1835, he divided them into a lower and upper group, both of which he anticipated would be found applicable to wide regions of the earth, and named them the Silurian System, the details of which he published under this title in 1839. In 1854, his later researches were published under the title of *Siluria : the History of the Oldest Known Rocks containing Organic Remains.*

He spent many years in Russia and in other countries in geologic explorations ; and, in 1846, he published *The Geology of Russia and the Ural Mountains*, in which he was assisted by Count A. von Keyserling and E. de Verneuil. He is also the author of upwards of one hundred separate memoirs presented to scientific societies. In 1844, after examining some specimens of Australian rocks brought to this country, and comparing them with those of the auriferons Ural Mountains, he came to the conclusion that gold existed in Australia. Two years later, he urged the Cornish tin miners to emigrate to the colony of New South Wales, where they could obtain gold from the alluvial soil in the same way as they extracted tin from the gravel of their own country.

The following is a summary of the Siluria strata as they occur in the district mentioned above, upon which Sir Roderick mainly founded his system ; they represent a thickness of about nine thousand feet :—

Upper strata.	Finely laminated reddish sandstone and shales. Micaceous grey sandstones of varying thickness. Argillaceous limestone. Calcareous shale, with concretions of limestone. Concretionary limestone and argillaceous shale. Shelly limestone and sandstone. Gritty sandstones and shales.
Lower strata.	Grits and sandy shales. Thick-bedded white freestone. Dark-coloured flagstones and slates. Dark-coloured calcareous flags, bands of limestone, and gritty flagstones.

Excepting a few indistinct fragments of land plants in the uppermost

beds, the whole remains are characteristically marine, and evince conditions favourable to a variety of invertebrate life. Among the prevailing and distinctive fossils are fucoids or seaweed plants, corals, radiate animals, sea-worms, and shell-fish in great variety. And strata characterised by these fossils are largely developed in many countries, especially along the flanks of the older mountain-chains. "They occur in Wales, in Cumberland, in Westmoreland; along the south of Scotland; south-east of Ireland; the south of France, Spain, Scandinavia, Russia, and Bohemia; in Asia Minor; along the Himalaya and Altai ranges; in Australia and New Zealand; along the Andes, Rocky Mountains, and Appalachians in America."

I have already mentioned Hugh Miller as a geologist, and no one was more ready than Sir Roderick Murchison to recognise his merits and to applaud his genius. Murchison received the honour of knighthood in 1846. The first editor of the *Scotsman*, Mr. Maclaren, was a student of geology, and published an *Account of the Geology of Fife and the Lothians* in 1839. It was, however, Hugh Miller that made geology popular in Scotland, and gave a great impulse to its study.

Section II.

Progress of Mechanical Science.

The relation between physical science and the mechanical arts are obvious in many ways. The exact boundaries between science and art are as undefinable as those which separate the kingdoms of nature from one another. If there are arts that cannot be called scientific, there are others which have contributed more to the store of knowledge than they ever drew from it, as the progress of science must be gathered from the records of experience, and in order to understand its importance, we must consult many of the varied pages of this record. In the progress of physical and mechanical science, as in that of social science and civilisation, the retarding obstacles everywhere mainly consist in the want or the imperfection of the requisite means—for observation, experiment, and verification in the former, for organisation and just and mutual union in the latter; in both spheres the chief retarding causes are the lack of appropriate and available means at the time and place when they were most

needed. Many of the instruments and the apparatus required for observation and experiments in physical science are complicated and expensive, such as telescopes in astronomy, organs in acoustics, and so on, and skill and art are required to construct them; hence it has often happened that imperfect instruments and the want of the necessary apparatus have greatly retarded the progress of physical science. It is, therefore, plain that mechanical art is an indispensable element in the advancement of physical science, and that physical and mechanical science are important factors in the development of civilisation. For the necessities and the requirements of a progressive nation or empire are constantly increasing, and in order to hold its own, it must not only continue to improve and develop its moral and social organisations, but it must also exert itself to the utmost to advance its knowledge, science, and all the practical arts which minister to the life and to the enjoyment of mankind. This is the solemn decree of nature, and nothing else in the universe is available for the human race.

I will indicate briefly what Scotland has done to advance mechanical science and steam power. The order of exposition is determined by the intersective efforts of the chief actors in the early stage of this subject, and these were Mr. Watt, Dr. Black, Dr. Robison, and some other professors in the University of Glasgow. Of the discoveries and experiments of Dr. Black I have already spoken, and of his friendship and scientific relations with Mr. Watt; and it seems necessary now to introduce Dr. Robison,—a Scotsman, who contributed much to spread the knowledge of mechanical science in his native country and throughout the civilised world.

John Robison[18] was educated in the University of Glasgow from the twelfth year of his age to the nineteenth, and thus had the advantage of the instruction of those able professors who raised the fame of this ancient University—Adam Smith, Dr. Black, and Dr. Robert Simson.[19] From an early period of his life he manifested a strong bent for physical and mechanical science; and it was in his student days that he formed a friendship with Mr. Watt which continued throughout their lives. Their acquaintance began in 1757, and the

[18] Born in 1739; died in 1805.

[19] Dr. Simson held the chair of mathematics from 1711 to 1761, and at his death he bequeathed to the University his collection of mathematical books, supposed to be the most complete then in the kingdom.—Macgregor's *History of Glasgow*, p. 343.

occasion of it is told by Robison himself thus:—"I was then a student in the University of Glasgow, and studying the science which I now profess to teach. The University was then building an astronomical observatory. Mr. Watt was employed to repair and set up a very noble collection of instruments bequeathed to the University by Mr. Macfarlane of Jamaica, a gentleman well known to the scientific world. Mr. Watt had apartments and a workshop within the College. I had from my earliest youth a great relish for the natural sciences, and particularly for mathematical and mechanical philosophy. I was eager to be acquainted with the practice of astronomical observation, and my wishes were much encouraged by the celebrated Dr. Simson, professor of geometry; Dr. Dick, professor of natural philosophy; and Dr. Moore, professor of Greek—gentlemen eminent for their mathematical abilities. These gentlemen brought me with them into Mr. Watt's shop; and when he saw me thus patronised, or introduced, his natural complaisance made him readily indulge my curiosity.

"After first feasting my eyes with the view of fine instruments, and prying into everything, I conversed with Mr. Watt. I saw a workman, and expected no more; but was surprised to find a philosopher, as young as myself, and always ready to instruct me. I had the vanity to think myself a pretty good proficient in my favourite study, and was rather mortified at finding Mr. Watt so much my superior. But his own high relish for those things made him pleased with the chat of any person who had the same tastes with himself, or his innate complaisance made him indulge my curiosity, and even encourage my endeavours to form a more intimate acquaintance with him. I lounged much about him, and, I doubt not, was frequently teasing him. Thus our acquaintance began." [20]

In 1759, Robison left Glasgow, and went to sea as tutor to a son of Admiral Knowles, with the rank of a midshipman. In this stage of his life he saw some service in Canada; and the information which he acquired by his extended means of observation was afterwards turned to good account. He returned to Glasgow in 1764, and then concentrated his attention on the study of chemistry under Dr. Black; and in 1766, on the removal of Dr. Black to Edinburgh, Robison was appointed professor of chemistry in the University of Glasgow. But in 1770, he again joined Admiral Knowles as his

[20] *Narrative of Mr. Watt's Inventions of the Improved Engine*, by Professor Robison.

private secretary and accompanied him to Russia; and this led to his appointment as professor of mathematics in the naval school at Cronstadt in 1772. In nine months he learned to speak and write the Russian language with ease, and performed his duties in a manner satisfactory to all concerned. In 1774, he was elected to the chair of natural philosophy in the University of Edinburgh, and was warmly invited to return to Scotland. He accepted the appointment, and spent the remainder of his life in incessant toil and scientific occupation.

His first course of lectures was delivered in Edinburgh, in 1774-75, and embraced the sciences of mechanics, hydrodynamics, astronomy, optics, electricity, and magnetism, all of which he treated with remarkable clearness and precision. As a lecturer and expositor in his own department, he was among the most eminent of his time in Britain. He was succeeded in the chair by John Playfair, who had previously been for twenty years professor of mathematics in this University; and he is the author of the fine historical Dissertation on the progress of mathematical and physical science, published in one of the supplements of the *Encyclopædia Britannica*, and some other writings connected with science.

Professor Robison's works consist of—(1) *Elements of Mechanical Philosophy*, of which only the first volume was completed and published in 1804, containing "Dynamics" and "Astronomy;" and (2) upwards of forty separate treatises and articles contributed to the *Encyclopædia Britannica*, which treated on several of the more experimental branches of physical science, and on the following practical branches: (1) the art of music, with which he was himself practically conversant, (2) strength of materials, (3) carpentry, (4) roof, (5) the construction of arches and centres for bridges, (6) watch-work, (7) rivers, (8) waterworks, (9) pumps, (10) variations of the compass, (11) seamanship, (12) machinery, (13) steam, and (14) the steam-engine. As already mentioned, Sir David Brewster edited the above works, along with some selections from the author's MS.; and to the articles "Steam" and the "Steam-engine" Mr. Watt, at the request of Brewster, contributed notes and additions.

James Watt was born at Greenock in 1736, and received his education there,[21] in the commercial school and grammar school, in

[21] His kinsman, James P. Muirhead, published his *Life of Watt* in 1858, and he had before, in 1854, published *The Origin and Progress of the Mechanical Inventions of James Watt*, in three volumes.

which he learned the elements of Latin and Greek, and attained a fair knowledge of mathematical science. To this was added the homely but important tuition which he received from his father, who carried on a business in articles used in navigation, ship fittings, and tackle. "He had a small forge set up for his own use; and was fond of repairing and making all sorts of instruments; he was also at a very early age informed about the use and principles of construction of the telescope, quadrants, and other optical instruments of which his father kept a stock for the supply of ships." From the aptitude which he showed for this kind of handiwork and in accordance with his own choice, it was decided that he should qualify himself for the trade of a mathematical instrument maker.[22]

In 1755, Watt proceeded to London with the aim of attaining more skill in the art of instrument making. An agreement was made with Mr. John Morgan, a mathematical instrument maker in Finch Lane, Cornhill, that young Watt should receive one year's instruction, for which he was to pay in return twenty guineas, and give his labour during that time in the business. As was expected, he made rapid progress. When his year's working was completed, he announced "that he could now make a brass sector with a French joint, which is reckoned as nice a piece of framing work as is in the trade." [23]

He returned to Scotland in the month of August, 1756, and shortly after proceeded to Glasgow with the object of finding employment; and in the month of October, the authorities of the University engaged him to clean and set up the Macfarlane collection of instruments in the College, as already mentioned. Thus it was that Watt was introduced and became so intimate with the professors and the leading men of this University; but he never attended any of Dr. Black's courses of lectures, nor any other course of lectures in the University. He finished this piece of work before the month of December. He then tried to establish himself in the city of Glasgow; but he met with unforeseen obstacles. As he had not served a regular apprenticeship, and was not the son of a burgess, the rules of the craftsmen came into effect, and he was forbidden to set up a workshop.

But to the credit of the eminent men who then illumined the University of Glasgow, they nobly came to the rescue of the great

[22] Muirhead's *Life of Watt*, pp. 25-30. [23] *Ibid.*, pp. 36, 37.

mechanical genius. And in the summer of 1757, they gave him permission to occupy apartments and open a shop within the College buildings, and to use the title of "Mathematical Instrument Maker to the University." He continued to occupy his rooms and workshop in the College till 1763, when he quitted them for a small house in the city; but the intimate and friendly relations which he had formed with the professors and others connected with the University were continued throughout his life. Turning attention to his inventions, touching steam itself, he says:—

"It was known very long before my time, that steam was condensed by coming into contact with cold bodies, and that it communicated heat to them.

"It was known by some experiments of Dr. Cullen, and others, that water and other liquids boiled in vacuo at very low heats; water below 100°.

"It was known to some philosophers, that the capacity or equilibrium of heat, as we then called it, was much smaller in mercury and in tin than in water.

"It was also known, that evaporation caused the cooling of the evaporating liquid, and bodies in contact with it.

"I had myself made experiments to determine the following facts:—1st, The capacities for heat of iron, copper, and some sorts of wood, comparatively with water. Similar experiments had also subsequently been made by Dr. Irvine, on these and other metals.

"2nd, The bulk of steam was compared with that of water.

"3rd, The quantity of water which could be evaporated in a certain boiler by a pound of coals.

"4th, The elasticities of steam at various temperatures greater than that of boiling water, and an approximation to the law which it followed at other temperatures.

"5th, How much water, in the form of steam, was required every stroke by a small Newcomen's engine, with a wooden cylinder six inches diameter, and twelve inches long in the stroke.

"6th, I had measured the quantity of cold water required in every stroke to condense the steam in that cylinder, so as to give it a working power of about 7lb. on the inch." He found that "water converted into steam can heat about six times its own weight of well water. . . . Being struck with this remarkable fact, and not understanding the reason of it, mentioned it to my friend Dr. Black,

who then explained to me his doctrine of latent heat."[24] This was in 1764.

Touching the steam-engine, Watt says:—"My attention was first directed in the year 1759 to the subject of steam-engines, by the late Dr. Robison himself, then a student in the University of Glasgow, and nearly of my own age. He at that time threw out an idea of applying the power of the steam-engine to the moving of wheel carriages, and other purposes, but the scheme was not matured, and soon after abandoned on his going abroad."[25]

Watt's first improvement on the steam-engine was made in 1765; and it consisted of the idea of introducing a separate condenser for the steam—a contrivance to prevent the cooling of the cylinder, and make the vacuum more perfect by condensing the steam in a vessel distinct from the cylinder. This was patented in the beginning of the year 1769, and in his specification he undertakes to lessen the consumption of steam and fuel in steam engines. This patent was renewed for a period of twenty-five years by an Act of Parliament in 1775. He took out another patent, in 1781, "for certain new methods of applying a continuous circular motion round an axis, and thereby give motion to the wheels of mills or other machines." The specification contains a description of five different modes of rotative motions. In 1782, he took out another patent, and the specification in this one contains six contrivances for equalising steam-power on the expansive principle; and among these, the double-acting engine, in which the steam is alternately applied to press on each side of the piston, while a vacuum is formed on the other side.

One of the most important of his improvements of the steam-engine was inserted in his patent of 1874. This is the "parallel motion," which he described thus:—"Methods of causing the piston-rods, pump-rods, and other parts of the engine, to move in perpendicular or other straight lines, and to enable the engine to act upon the working beams both in pushing and in pulling; and three varieties are described." This specification also described improved modes of applying the steam-engine to drive mills which have many wheels requiring to move round in concert; a simple method of applying the power of the steam-engine to the working of heavy

[24] Letter and notes by Mr. Watt to Robison's *Mechanical Philosophy*, Vol. II., pp. 7, 8, 113-116.

[25] *Ibid.*, Vol. II., p. 113.

hammers or stampers; a portable steam-engine and machinery for moving wheeled carriages.[26]

It was only after great perseverance, patience, hard toil, and thought, and many disappointments and untold anxieties that Mr. Watt at last attained success. It was fortunate for him, and for mankind, that from his first appearance in Glasgow he won not a few warm and able friends—men who knew and appreciated his great genius and the worth of his character, encouraged him, and stood by his side in one of the greatest trials of his life, to give their testimony to his rare genius and unimpeachable integrity.[27]

Watt entered into partnership with Mr. Boulton, of Birmingham, and, after 1775, for many years he resided in that city; and continued his exertions, with little intermission, to the further improvement of the steam engines. The business proved successful, and Watt retired at the end of the last century, leaving two of his sons in the establishment, which continued to prosper. The ingenious improver of the steam-engine, after many efforts and struggles, was enabled to spend the evening of his days in comparative wealth and leisure.

Mr. Watt invented many things beside his improvements of the steam-engine, amongst which may be mentioned a micrometer for measuring distances, which he used in his surveys of the Crinan and Gilp, and the Tarbert intended canals, and in other surveys of canals which he was employed to make; also, a copying-machine, which was patented in 1780, described as a "new method of copying

[26] Watt's Notes to Robison's *Mechanical Philosophy*, Vol. II., pp. 118-121, 149-151; also Muirhead's *Life of Watt*, pp. 180, 247, 278-284, 285, 293-296.

[27] With regard to two of the gentlemen alluded to above, I will quote Mr. Watt's own words:—"Although Dr. Black's theory of latent heat did not suggest my improvements on the steam-engine, yet the knowledge upon various subjects which he was pleased to communicate to me, and the correct modes of reasoning and of making experiments of which he set me the example, certainly conduced very much to facilitate the progress of my inventions; and I still remember with respect and gratitude the notice he was pleased to take of me when I very little merited it, and which continued throughout his life.

"To Dr. Robison I am also bound to acknowledge my obligations for very much information and occasional assistance in my pursuits, and above all for his friendship, which ended only with his life; a friendship which induced him, when I was beset with a host of foes, to come to London in the depth of winter, and appear as a witness for me in a court of justice, whilst labouring under an excessively painful disorder, which ultimately deprived him of life. To the remembrance of that friendship is principally owing my taking upon myself the office of his commentator at my advanced age."—Letter of Mr. Watt, in Robison's *Mechanical Philosophy*, Vol. II., p. 9.

letters and other writings expeditiously." At an early period of his career he built some organs. He planned and superintended the construction of the Monkland canal.

He wrote comparatively little, but he was an exceedingly well-informed man. He was fond of chemistry as well as mechanics, and was well versed in the theory and practice of both. He discovered the composition of water, and his friends have maintained his priority to Cavendish in this discovery. He was elected a Fellow of the Royal Society of Edinburgh in 1748 ; of the Royal Society of London in 1785, and a correspondent member of the Institute of France in 1808. In 1806, the University of Glasgow conferred on him the honorary degree of LL.D. ; and in 1814, the Academy of Sciences of the Institute of France elected him one of its eight foreign Associates. After the toils and heat of the day, his evening closed in calm serenity ; full of honour and of years, beloved by his friends, and surrounded by his family, he passed away on the 25th of August, 1819, at Heathfield, near Birmingham, in the eighty-third year of his age. Statesmen, philosophers, men of science, and men of the world united in extolling the worth of his character and the greatness of his genius. From the notices of his death, I shall quote a part of the one which Lord Jeffrey wrote :—

" We have said that Mr. Watt was the great improver of the steam-engine ; but, in truth, as to all that is admirable in its structure, or vast in its utility, he should rather be described as its inventor. It was by his inventions that its action was so regulated as to make it capable of being applied to the finest and most delicate manufactures, and its power so increased as to set weight and solidity at defiance. By his admirable contrivance, it has become a thing stupendous alike for its force and its flexibility—for the prodigious power which it can exert, and the ease, and precision, and ductility, with which it can be varied, distributed, and applied. . . . It can engrave a seal, and crush masses of obdurate metal before it—draw out without breaking a thread as fine as gossamer, and lift a ship of war like a bauble in the air. It can embroider muslin and forge anchors, cut steel into ribbons, and impel loaded vessels against the fury of the winds and waves.

" It would be difficult to estimate the value of the benefits which these inventions have conferred upon this country. There is no branch of industry that has not been indebted to them ; and, in all the most material, they have not only widened most magnificently

the field of its exertions, but multiplied a thousand-fold the amount of its productions. . . . It has increased indefinitely the mass of human comforts and enjoyments, and rendered cheap and accessible, all over the world, the materials of wealth and prosperity. It has armed the feeble arm of man, in short, with a power to which no limits can be assigned; completed the dominion of mind over the most refractory qualities of matter; and laid a sure foundation for those future miracles of mechanic power which are to aid and reward the labours of after generations. It is to the genius of one man, too, that all this is mainly owing, and certainly no man ever bestowed such a gift on his kind. The blessing is not only universal, but unbounded; and the fabled inventors of the plough and the loom, who were deified by the erring gratitude of their rude contemporaries, conferred less important benefits on mankind than the inventor of our present steam-engine.

"This will be the fame of Watt with future generations; and it is sufficient for his race and his country. But to those to whom he more immediately belonged, who lived in his society and enjoyed his conversation, it is not, perhaps, the character in which he will be most frequently recalled, most deeply lamented, or even most highly admired. Independently of his great attainments in mechanics, Mr. Watt was an extraordinary, and in many respects a wonderful man. Perhaps no individual in his age possessed so much and such varied and exact information—had read so much, or remembered what he had read so accurately and well. He had infinite quickness of apprehension, a prodigious memory, and a certain rectifying and methodising power of understanding, which extracted something precious out of all that was present to it. His stores of miscellaneous knowledge was immense—and yet less astonishing than the command he had at all times over them. It seemed as if every subject that was casually started in conversation with him, had been that which he had been last occupied in studying and exhausting; such was the copiousness, the precision, and the admirable clearness of the information which he poured out upon it without effort or hesitation. Nor was this promptitude and compass of knowledge confined in any degree to the studies connected with his ordinary pursuits. That he should have been minutely and extensively skilled in chemistry and the arts, and in most of the branches of physical science, might perhaps have been conjectured; but it could not have been inferred from his usual occupations, and probably is not generally known

that he was curiously learned in many branches of antiquity, metaphysics, medicine, and etymology, and perfectly at home in all the details of architecture, music, and law. He was well acquainted, too, with most of the modern languages, and familiar with their most recent literature. Nor was it at all extraordinary to hear the great mechanician and engineer detailing and expounding, for hours together the metaphysical theories of the German logicians, or criticising the measures or the matter of the German poetry.

"It is needless to say, that, with those vast resources, his conversation was at all times rich and instructive in no ordinary degree: but it was, if possible, still more pleasing than wise, and had all the charms of familiarity, with all the substantial treasures of knowledge. No man could be more social in his spirit, less assuming or fastidious in his manners, or more kind and indulgent towards all who approached him. . . . He had a certain quiet and grave humour, which ran through most of his conversation, and in a vein of temperate jocularity, which gave infinite jest and effect to the condensed and inexhaustible information which formed its main staple and characteristic.

"In his temper and disposition he was not only kind and affectionate, but generous, and considerate of the feelings of all around him; and gave the most liberal assistance and encouragement to all young persons who showed any indications of talent, or applied to him for patronage or advice. . . . All men of learning and science were his cordial friends; and such was the influence of his mild character and perfect fairness and liberality, even upon the pretenders to these accomplishments, that he lived to disarm even envy itself, and died, we verily believe, without a single enemy."

The application of steam power to navigation in the end of the last century, and to railway trains in the present, has produced the most striking results; and although Watt was not directly connected himself with the early attempts of steam navigation, still its introduction was greatly dependent on his improvements of the steam-engine. The development of steam-power in manufactories and other forms will be afterwards noticed; but before quitting the subject, I will describe the earliest attempts to propel ships by steam. Many projects were spoken of which were never realised. But Mr. Miller of Dalswinton, assisted by Mr. James Taylor, tutor in his family, formed a plan for vessels with paddle wheels to be driven by a steam-engine; and with the assistance of Mr. Symington of Wan-

lockhead, a practical engineer, a small engine and a boat were constructed and fitted up: and in October, 1788, this boat was launched on the Loch of Dalswinton, in Dumfriesshire, and she attained a speed of five miles an hour. They then built a larger boat, the engine of which Mr. Symington constructed at Carron ironworks; and, in 1789, this vessel was launched on the Forth and Clyde Canal and propelled by steam, and she attained a speed of about seven miles an hour. These are among the earliest attempts of steam navigation of which we have authentic record. For some time after, this new enterprise lingered; but in the very beginning of the present century Mr. Symington's experiment was repeated on the Thames with complete success. While in America on the river Hudson, Mr. Robert Fulton, the son of a Scotsman who emigrated from Dumfriesshire, started a steamboat with an engine of Boulton and Watt, in 1807. It is a curious fact that, in the year 1814, Scotland had five steam vessels, while England had not a single one. In the following year, however, England had three, and in 1820, she had seventeen; while Scotland had fourteen. Subsequently, owing to causes easily understood, steam ships increased in number far more rapidly in England than in Scotland, though not faster in proportion to the population and wealth of the latter country.

The most striking and important of the improvements in steam vessels which have been made in the present century is the substitution of the screw-propeller for the paddle-wheels; while in the construction of ships themselves wood has been superseded by iron and steel.

With regard to the importance, the variety, the subtilty, and the power of its practical applications, and the latent or as yet undeveloped power inherent in it, the science of electricity takes a high rank; and with a brief and consequently a very imperfect notice of it in these various relations, this chapter will conclude.

The science of electricity is of modern growth; very little was known of its nature or powers prior to the last century, though some of its phenomena attracted the attention of a few scientific men in the seventeenth century. Between the years 1720 and 1736, Stephen Grey, assisted by Wheeler, discovered that the human body conducts electricity, that it acts at a distance—motion in light bodies being produced by frictional electricity at a distance of 666 feet; he also stated the fact of electric induction and other phenomena. About 1733, Dufay originated his dual theory of two electric fluids; and stated that two bodies similarly electrified repel each other, and

attract bodies oppositely electrified. What was termed the Leyden Jar was discovered by several persons in 1745; and the following year Winckler constructed the Leyden Battery. About the same time, important researches were made by Watson, Canton, and others. In 1747, Franklin enounced his theory of a single fluid; he termed the vitreous electricity positive, and the resinous negative; and, in 1752, he demonstrated the identity of the electric spark and lightning, drawing electricity from a cloud by the use of a kite. Still this subtle and powerful element was then but little understood; and, in 1752, Professor Richmann was killed at St. Petersburg while repeating Franklin's experiments. Since this period the subject has been treated continuously by many able and famous men of science.

The term electricity, as now applied, includes various phenomena of very different characters; such as magnetism, frictional electricity, and voltaic electricity. Two general properties may be noted—(1) polarity and (2) current action. In the first there is a uniformity through all its modes, and it is the pervading attribute which gives a distinctive character to all the phenomena: the second peculiarity of the electric forces is that they can be carried to any distance through solid conductors, so as to discharge themselves at any point. Frictional electricity is generated by mechanical force in electrical machines.

The practical applications of the electric forces are now numerous, and all of comparatively recent introduction. Although the idea of applying electricity to communicate signals was conceived by Watson about the middle of the last century, the earliest proposal of this appeared in the *Scots Magazine* for February, 1753, when a correspondent from Renfrew, who signed himself C. M., proposed several kinds of telegraphs, acting by the attractive force of electricity, conveyed by a series of parallel wires equal in numbers to the letters of the alphabet, and insulated by supports of glass or jeweller's cement at every twenty yards. Words were to be spelt by the electricity attracting letters, or by striking bells corresponding to letters. Towards the latter part of the last century and the early part of this various plans of telegraphs were proposed by different men; but 1837 is the date of the practical realisation of the electric telegraph. A few years later it began to be employed in connection with the working of railways; and it is obvious that the railway system could not have been developed without the aid of the electric tele-

graph, or some similar method of rapid and instantaneous signalling. The modes of electric telegraph have been much perfected, and the systems of communication immensely developed, within recent years.

Among those who have advanced the knowledge of electricity and the development of its practical application during the past half century, the veteran Professor of Natural Philosophy in the University of Glasgow, Lord Kelvin, holds a distinguished place. He has made many experiments, practical applications, and written much on the subject.

Submarine electric telegraphs were successfully introduced in 1851, when the first line between Dover and Calais was opened; and it has since been greatly developed, and direct telegraphic communication established between Europe and America many years ago. Electric clocks were introduced in 1854, and are now common.

An apparatus for regulating the electric light was first devised and exhibited by Staite and Petrie in 1848. Jules Duboscq's electric lamp was shown at the Paris exhibition in 1855; and, in 1856, it was employed by Professor Tyndall for illustrating his lectures on light and colour, which he delivered that year at the Royal Institution in London. Since, the electric light has been greatly developed, and used for lighting public buildings, places of business, and the streets of cities; and if the cost of its production was reduced it would be more universally used for lighting purposes.

In 1854, M. Bonelli, of Turin, invented a plan of employing magnets and electro-magnets in weaving, by which he proposed to supersede the tedious and costly Jacquard system of cards. His loom was set up in London in 1859; and, in the summer of 1860, Professor Faraday lectured upon it at the Royal Institution. There are other applications of electricity which it is unnecessary to enumerate.

An exceedingly useful and beautiful application has recently been made in the science of acoustics, by the invention of the telephone, which transmits the sounds of spoken language along wires to a considerable distance.

In concluding this chapter, the importance of mathematical science was indicated, and the Scotch mathematicians noticed; Dr. Black's researches and discovery of latent heat, and Leslie's treatment of radiant heat and experiments were explained; I then indicated the results of more recent researches and referred to spectrum analysis. The writings, experiments, observations, and the discoveries of Sir David Brewster were noticed; and the contributions of several

Scotsmen to geology were noted. The department of mechanical or applied science was then treated, and the writings of Dr. Robison and his teaching in this relation were noticed, and the bearing of the discovery of latent heat on the application of steam-power. A short account of Watt's career was given; his experiments on steam, improvements on the steam-engine, his struggles, and ultimate success, his genius, accomplishments, and character, were noticed. The early attempts of steam navigation were explained; and finally some account was presented of the discovery and the varied applications of electricity.

CHAPTER XLV.

Progress of Medical Science in Scotland in the Eighteenth and Nineteenth Centuries.

THE aim of this chapter is like the last one, not an attempt to present a history of the great and important science of medicine in all its branches, but to indicate what Scotland has contributed to the progress of this science, and also to give some account of the rise, the progress, and the organisation of the several institutions in which this science was taught in our country—in other words, the medical schools of Scotland. It will therefore, in the first place, indicate the bases of medical science ; in the second, touch briefly on the prevailing theory in the early part of the eighteenth century ; and in the third, proceed to narrate the advance of medical science in Scotland, and the establishment of our several medical schools.

The prime phenomenon presented to medical science is life. The first requisite of this science, therefore, is to enounce what life consists of, and more particularly what constitutes human life.—(1) As to the constituent elements of the human organism ; (2) with reference to its structure ; and (3) its functions. In other words, the science of medicine must be founded on biology ; and it rests immediately on that part of biology termed human anatomy, physiology, and pathology—based on physiological analysis ; and its subsidiary sciences are chemistry, botany, and some parts of physical science. The development of biology is gradually leading to a more scientific basis in the science of medicine, and the necessary conditions of health are becoming better understood.

Without entering into many details I shall endeavour to present the chief features of the prevailing theory in medicine immediately preceding the time when the Scottish schools began to arise ; such a sketch is interesting in itself, and it will enable us to understand what Scotland has done in this great department of science.

Galen, born A.D. 131, was the oracle in medical science for upwards of 1400 years ; but, in 1492, Paracelsus was born. The son of a physician, he determined to follow the profession of his father. He

travelled about in quest of remedies amongst the chemical practitioners of those times, and from them he learned the use of mercury and antimony, and of opium. By the application of these remedies he cured many diseases which had baffled the remedies of the Galenists; and, being a bold man, he made the most of this, and attained such a reputation that he was appointed a professor in the University of Basle. In this position he was forced to employ some method, and seizing on such theories as then existed among chemists, he formed a system of physic, supported by much new and meaningless jargon of his own. His lectures were chiefly employed in recommending his own chemical remedies, and in bold attacks upon the established schools of physic. He ordered the books of Galen and Avicenna to be brought into his school and publicly burned as useless lumber. Thus he formed a sect, and by the middle of the seventeenth century physicians were divided into the two sects of Chemists and Galenists.[1]

Galenism now fell rapidly in Germany, France, and England. The philosophy of Descartes had adopted many of the doctrines of the Chemists, readily united with their system, and established its credit; and the publication of Harvey's doctrine of the circulation of the blood completed the ruin of the Galenic fabric. Bellini applied the principles of mathematics to the physiology and pathology of medicine; and his system was so specious and promising, and so consonant with the reigning philosophy, that it immediately prevailed in Italy. It was brought to this side of the Alps by Dr. Pitcairn,[2] and soon became the prevailing system in Holland, England, France, and Germany; and it is recorded that the followers of this system were always the friends of observation and experiment, and that they detected and exploded many false hypothesis.

At the beginning of the eighteenth century the medical school of Leyden had a high reputation, which was extended by the celebrated physician Herman Boerhaave,[3] who was appointed to the Chair of Medicine in this University in 1701. He digested and taught a medical theory which held an almost undisputed sway for upwards of half a century. When he entered the school of Leyden, he found it divided between the chemical system of Sylvius de le Boe, and the mechanical system of Bellini and Pitcairn; and he had the discernment to select the most useful parts from both systems. From

[1] Dr. Wm. Cullen's Works, Vol. I., pp. 392-393. 1827.

[2] Mackintosh's *History of Civilisation in Scotland*, Vol. III., p. 329.

[3] Born in 1668; died 1738.

Belini he adopted the doctrines of obstruction, and of lentor; from the Chemists he took the doctrine of acid and alkali, but corrected and limited; he also admitted the doctrine of plethora, the only remains of the Galenic theory which the discovery of the circulation of the blood seemed to support. Thus he combined the doctrines of the mechanical or mathematical school and the Chemists; and, as he possessed good analytic and elaborative faculties, he produced a system superior to any that had before appeared. He endeavoured to simplify the study of medicine, and rejected many useless hypotheses. He lectured on the theory of medicine, botany, and chemistry, with surprising clearness, and till then unmatched precision; and students flocked to him from all quarters.[4]

Boerhaave's *Aphorism or Practice of Physic* appeared in 1709, and his *Institutions or Theory of Physic* shortly after. These two treatises contain his system; they passed through many editions, and were translated into almost every European language, and into Arabic; while they are remarkable for elegance, clearness, and brevity of style. But the influence of Descartes' philosophy appears in his physiology, and in other parts of his system; and it is a curious fact which has not been noticed before, that through the teaching of Boerhaave's system in Scotland, parts of the philosophy of Descartes reappear in more than one form in the medical literature of our own country. He adopted Descartes' idea of mind and body, and other notions of this philosopher. Boerhaave in his physiology considered man as composed of two distinct substances—mind and body; the essential nature of mind is to be conscious, to think, and to will; but the essential nature of the body is to be extended and impenetrable. He says "the idea or definition of body has nothing in common with that of mind; nor has the idea of mind, on the other hand, anything in common with that of body." He considered the study of mind to be an important part of physiology; and so he gives an exposition of the mental faculties under the heads of the internal and external senses. He states that "our bodies receive nothing else from sensible objects, to produce sensation, than a change in the surface of the nerves excited by the contact of the object. I do not say that this is to feel, but I say that we feel when this takes place. Sensation, therefore, is nothing either in the object or in the nerve affected, but a certain idea which God has assigned to this particular corporeal

[4] Hamilton's *History of Medicine*, Vol. II., pp. 199-203: Dr. Cullen's Works, Vol. I., p. 411.

change. This is acknowledged by Newton in the last edition of his *Optics.*" Following Descartes, he assumed that the change produced upon the extremity of a sentient nerve must be propagated along the nerve to the brain before sensation can be produced; until his time, two mechanical explanations of this phenomenon had been given, one of which considered the nerves as solid vibratory cords, the other as hollow undulatory canals. Boerhaave adopted the latter view, and assumed that the change in the sensorium was nothing more than a repulsion of the nervous fluid against their origin in the brain. He conceived that the cerebrum controls the voluntary motions, and the cerebellum, the involuntary; but, as in other parts of the body, both these classes of motions are performed together, he assumed that the nerves of these parts must be composed of fibres, derived partly from the cerebrum and partly from the cerebellum, and retaining throughout their course a peculiar function according to the part whence they issue. He was also inclined to believe that each of the external senses had its own distinct seat in the brain.

He conceived the human body to be a combination of all sorts of mechanical contrivances or machines arranged by God into one system, so as to enable it to maintain its existence for a series of years, repairing the waste it undergoes from its own motions, and producing systems similar to itself. Thus, he attempted to explain the phenomena of the human body by the principles of mechanical philosophy, but accompanied with some limitations. He says: "I am persuaded that, even in simple bodies, general laws are insufficient to explain all the individual phenomena, much less do I suppose them capable of accounting for those in the human body, the most complex of all. But if some portions of the human body correspond in their structure with mechanical instruments, they must be governed by the same laws. For all the power of these parts is in the motion which they produce; and motion, by whatever body it is performed, takes place according to the universal laws of mechanics. There are some who think that those actions should not be explained by mechanical laws, the mechanical causes of which are unknown to us. But this is said without an accurate examination of the matter, for we do not speak of the causes but of the effects as being governed by mechanical laws. There are many and considerable motions performed in nature, of the causes of which we are ignorant; but the motions themselves are governed by supreme and universally diffused laws. The magnet, the cause of whose action is wholly unknown to

us, performs its motions agreeable to a certain and ascertained law, which, when once known, can be applied, without danger of mistake, to future experiments. The human body in like manner exhibits motions, the causes of which are unknown to us; but their effects are the elevation of weights by cords affixed to them, the propulsion of fluids through determinate vessels, and other effects like those produced by mechanical causes, and they are not governed by any other laws. So it appears that both parties have erred, the mechanicians, in attempting to define all things from their art, without being sufficiently acquainted with the structure of the parts, the powers of which they expressed by numbers; and those who hated the very name of mechanics have declared that our body is independent of those very laws by which all bodies whatsoever are governed. The misfortune is that such physiological subjects are usually handled either by mathematicians unskilled in anatomy, or by anatomists who are not versed in mathematics." [5]

He attempted to explain the contraction of the muscular fibre upon mathematical principles, and displayed ingenuity and skill, but he failed to explain this interesting phenomenon. He had, however, a pretty distinct idea of the use and the abuse of chemistry in medical science. The following contains in his own words a kind of summary of his physiological system:—"We are obliged to confess that there are many truths, and those too of the greatest importance, in the whole of medical physiology, a knowledge of which can be acquired only by the assistance of chemistry. But the greatest glory of this valuable art is, that it alone is able to expose and correct those errors, which some whimsical dabblers in chemistry had introduced into medicine, as Boyle, Bohn, Hoffmann, Homberg, and others, have shown by beautiful examples. Those vain trifling chemists were certainly in the wrong, who have pretended by their art alone to explain physiology in all its parts; nor, however, are those less mistaken who imagine they can do this without chemistry. Let anatomy faithfully describe the parts and structure of the body; let the mechanician apply his particular science to the solids; let hydrostatics explain the laws of fluids in general, and hydraulics their actions, as they move through given canals; and, lastly, let the chemist add to all these, whatever his art, when fairly and carefully applied, has been able to discover; and then, if I am not mistaken,

[5] *Institutions.*

we shall have a complete account of medical physiology." This is not a very perfect conception of the human organism.

But his pathology was more defective than his physiology, and took less account of the essential functions of the human body; there was no clear conception of the real normal human organism formed, far less explained, either upon mathematical or any other principles.

Such, then, was the state of medical science in the first half of the eighteenth century; and such was the system which was introduced into Scotland, and taught in the early stages of the history of our medical schools, as the following statement from the highest authority shows :—

"When I first applied myself to the study of medicine, I learned only the system of Boerhaave; and even when I came to take a professor's chair in this University, I found that system here in its entire and full force; and as I believe it still subsists in credit elsewhere, and that no other system of reputation has been yet offered to the world, I think it necessary for me to point out particularly the imperfections and the deficiencies of the Boerhaavian system, in order to show the propriety and necessity of attempting a new one. To execute this, however, so full as I might, would lead me into a detail that can hardly be admitted of here, and I hope is not necessary, as I think that every intelligent person, who has acquired any tolerable knowledge of the present state of our science, must in many instances perceive its imperfections. I shall therefore touch only upon the great lines of this system; and from the remarks I am to offer, I trust that both the mistakes and the deficiencies which run through the whole of his works will appear." [6] I will now proceed to the chief subject of the chapter.

As stated in a preceding volume, the first charter to the surgeons was granted by the Town Council of Edinburgh in 1506; the science of medicine, however, had made little progress in Scotland two centuries later. But towards the end of the seventeenth century a movement began and various efforts were made to found a medical school in Edinburgh, which ultimately succeeded. The influences and the efforts which led up to the founding of the Edinburgh school originated from the outside, not from within the University itself, in the early stage of its history. As

[6] Dr. William Cullen's *Introductory Lectures on the Practice of Physics*, Vol. I., p. 412.

stated in the last volume, the College of Physicians in Edinburgh was incorporated in 1681 ;[7] and the old College of Surgeons got a royal charter in 1694, and at the same time a grant from the Town Council of unclaimed dead bodies. The anatomical theatre was opened in 1697. Thus the incorporated physicians and surgeons began to form a medical school outside the University ; and afterwards some of the members of these bodies were taken into the University as professors. In this way the great medical school of Edinburgh arose, and it has continued to be surrounded by extra-mural teachers, some of whom were highly distinguished members of the profession.

In 1705, Robert Elliot, a member of the College of Surgeons, was elected by his fellow-members as the special teacher of anatomy ; and the Town Council recognised his appointment under the title of Professor of Anatomy in the University, and for his encouragement granted him a salary of £15 : thus Elliot became the first Professor of Anatomy in the University of Edinburgh. The teaching of chemistry was recognised by the University in 1713, when James Craufurd, a pupil of Boerhaave, was appointed Professor of Medicine and Chemistry. He was succeeded in 1726, by Andrew Plummer, a graduate of Leyden and a pupil of Boerhaave. He lectured ably upon chemical pharmacy for twenty-nine years. He was the author of the preparation known under the name of Plummer's Pill ; and it was recorded that he was a man of varied knowledge and accomplishments. The study of botany was recognised by the University authorities in 1676 ; and Dr. Charles Preston, the second professor of this useful branch of knowledge, was appointed in 1706. The following year he issued an advertisement in the *Edinburgh Courant* to this effect : "Dr. Preston teaches his lessons of botany in the Physic Garden at Edinburgh, the months of May, June, July, and August, 1707. Therefore, all gentlemen and others, who are desirous to learn the said science of botany, may repair to the said garden, where attendance will be given." Botany as a subject for lectures in a class-room scarcely then existed.

John Munro, a military surgeon, who had served in King William's army, retired and settled in Edinburgh early in the century, and was president of the College of Surgeons in 1712. He had an only son, Alexander Munro, who was carefully educated by his father. In 1717, young Munro, at the age of twenty, was sent to study

[7] Mackintosh's *Hist. Civil. Scot.*, Vol. III., p. 369.

anatomy under Cheselden, in London ; subsequently he proceeded to Paris, where he studied anatomy under M. Bouquet, and attended classes in the hospitals; whence to Leyden, and placed himself under Boerhaave, who gave a favourable report of his pupil's progress. He returned to Scotland in 1719, and was admitted a member of the College of Surgeons.

In January, 1720, Alexander Munro was appointed professor of anatomy in the University of Edinburgh, and soon after commenced lecturing in the surgeons' theatre. In 1726, Drs. Andrew Sinclair and John Rutherford were appointed professors of the theory and practice of medicine ; and thus the faculty then consisted of a chair of anatomy, three professors of medicine, a professor of chemistry, and a professor of botany. These professors were appointed for life, and this was the first regular establishment of the medical faculty in the University of Edinburgh.

Munro started his course of lectures with a class of fifty-seven students, and the class gradually increased in numbers. For the first ten years the average number was sixty-seven, for the second one hundred and nine, and for the third one hundred and forty-seven : students joined his class from all parts of Scotland, England and Ireland. His course of instruction was a comprehensive one, and embraced surgery as well as anatomy ; and he illustrated his teaching by dissections of the human body, and of animals, birds, and fishes, for comparison. After explaining the anatomy of each part, he treated of its diseases, especially the organs which required operations, and concluded his course with a few lectures on physiology. He delivered this course continuously for thirty-eight years, and spoke without notes except for the names and dates.

In 1726, he published his work on *The Human Bones*, which passed through eight editions in his lifetime, and was translated into most of the European languages; and it contributed much to raise the reputation of the Edinburgh medical school. The whole of his writings have been collected and published in one large volume. It was also mainly by the exertions of Monro and Provost Drummond that the Royal Infirmary of Edinburgh was erected, endowed, and incorporated, the foundation stone of which was laid in 1738. When it was opened Monro attended it and delivered lectures on surgery ; [8] the clinical lectures were begun in 1746.

[8] Monro was the originator of the Medical Society, formed in 1732, for the publication of papers on medical subjects, and he was appointed its secretary,

In 1758, Dr. Monro resigned the chair of anatomy to his son, and devoted himself for the remaining nine years of his life to practice, and to lecturing in the Infirmary as one of the clinical professors. He died in 1767, in the seventieth year of his age. His merits have been summed up, by a well qualified Professor thus :—

"He had family and friends influential and plenty, but the work he had to do was of a kind at which friends could only stand and look on. He had to do a new thing in Edinburgh : to teach anatomy, and to provide for the study of it, in a town of then only thirty thousand inhabitants, and in a half-civilised and politically disturbed country ; he had to gather in students, to persuade others to join him in teaching, and to get an infirmary built. All this he did, and at the same time established his fame not only as a teacher but as a man of science, and gave a name to the Edinburgh school which benefited still more the generation which followed him. This really great and good man, therefore, well earned the title often given him, of father of the Edinburgh medical school." [9]

A chair of midwifery was regularly established in the University in 1739—Mr. Robert Smith being appointed by the town council "professor of midwifery in this city's College, with the same privileges and immunities which the other professors in the said College do enjoy, or that are known to appertain to a professor of midwifery in any other well-regulated city or place." It is well known that the institution of this chair, like most of the other chairs connected with medicine in Edinburgh, originated with the Colleges of Physicians and Surgeons. The Town Council had before, in 1726, on the recommendations of the Colleges of Physicians and Surgeons, appointed Mr. Joseph Gibson "professor of midwifery in this city, with power

and the editor of the six volumes of medical essays and observations which it published. In 1739, on the suggestion of Maclaurin, the mathematician, its scope was extended to subjects of philosophy and literature ; but its meetings were interrupted for some years by the Rebellion. In 1752, they were renewed, and, under the name of The Philosophical Society of Edinburgh, the first volume of its *Transactions* was published in 1754, the second in 1756, and the third in 1771 ; but in 1782, a scheme was proposed for the establishment of a society on a wider plan for the culture of every branch of science and taste ; and the Royal Society of Edinburgh, which included all the members of the Philosophical Society, and many other eminent men, was formed and incorporated by royal charter in 1783.

[9] Professor Struthers, *Historical Sketch of the Edinburgh Anatomical School*, p. 25 (1867) ; compare Hamilton's *History of Medicine*, Vol. II., pp. 296-299.

to him to profess and teach the said art, in as large extent as it is taught in any city or place where this profession is already instituted." But Gibson had no chair in the University, he was merely appointed to teach in the city.[10] A separate chair of materia medica was instituted in 1768; and a chair of natural history was established by the Crown in 1767.

Dr. Cullen and Dr. Black contributed greatly to raise and to maintain the reputation of the Edinburgh medical school, of the teaching and discoveries of the latter, I have already spoken in the last chapter. Dr. Cullen was born at Hamilton on the 15th of April, 1710; his father was a writer, and acted as factor to the Duke of Hamilton. He received the rudiments of education at the Grammar School of Hamilton, and afterward studied at the University of Glasgow. He was apprenticed with Mr. John Paisley, a practising doctor in Glasgow: to serve an apprenticeship was then almost the only way in which a knowledge of medicine could be obtained in Scotland. His master, though engaged in a large practice, had collected an extensive and valuable medical library; and Cullen fully availed himself of the advantages which it presented. When his medical studies were completed at Glasgow, in the end of 1729, he went to London, with the object of obtaining some situation in which he might have opportunities of acquiring a practical knowledge of his profession. He obtained an appointment as surgeon to a merchant ship engaged in trading to the West Indies; and during her voyage she remained for six months at Porto Bello, and this and other circumstances connected with the voyage gave him an opportunity of seeing many new scenes and peculiarities of life and manners. After returning from the West Indies, he remained for some time in London, and attended the shop of an apothecary in Henrietta Street. At this time he seems to have specially directed his attention to materia medica.

He returned to Scotland about the end of the year 1731, and was invited by Captain Cleland to live in his family and attend to the health of his son, in the parish of Shotts, near Hamilton. This was a very good locality for Dr. Cullen to commence the practice of his profession. After practising here for about two years, he resolved to devote his attention entirely to medical studies for some time, preparatively to starting as a practitioner in Hamilton. With this

[10] *Burgh Records of Edinburgh;* Professor A. R. Simpson's *Introductory Lecture on the History of the Chair of Midwifery, etc.*, pp. 9-10.

view he went to the village of Rothbury, in Northumberland, where he lived with a dissenting clergyman, and chiefly occupied himself in the study of philosophy and general literature, which would partly account for the wide and accurate knowledge of the history of philosophic thought which appears in his writings.

In 1734, he entered the University of Edinburgh and attended the medical classes for two years. On finishing his courses at Edinburgh, in the spring of 1736, he commenced business as a surgeon in Hamilton; and in a short time he obtained a good practice. Soon after his settlement in Hamilton, Dr. Cullen became the friend and the medical preceptor of the well-known Dr. William Hunter, whose genius and love of study were so congenial with his own; and their friendship continued till the death of Dr. Hunter in 1783. Dr. Hunter retained to the end of his life a warm feeling of gratitude for Cullen, and never omitted an opportunity of acknowledging how much he owed to him. Dr. Cullen removed from Hamilton to Glasgow in 1744, where he had a wider sphere for the exercise of his genius and his great talents. He thought that a medical school could be established in Glasgow, and his foresight was well founded.

He applied to the authorities of the University for leave to deliver lectures on the theory and practice of medicine, chemistry, and botany, so bold and comprehensive was the grasp of principles which he had attained. The authorities acceded to his request, and his first courses of lectures were delivered in the University of Glasgow in 1746; and they mark an era in the history of medicine in Scotland. In the first place, he laid aside the use of Latin in the composition and delivery of his lectures, which appeared to many a rash and unpardonable innovation; in the second, he had the courage and discrimination to reject the use of the *Institutions* and *Aphorisms* of Boerhaave as text-books, which were then generally used in the medical schools of Europe; in the third, he struck out new lines himself; and in the fourth, he was the first in Britain who assigned to chemistry its proper position as a science of great importance, and susceptible of wide application. In his introductory lectures on this memorable occasion he referred to the advantages which a teacher has when he explains his own ideas and writings, instead of commenting upon those of others, and then adds:—"I ought to give a text-book myself, but shall not attempt it, till after a little more experience in teaching. In the meantime, I shall endeavour to supply its place by an easy, clear order and

method, so that the want of it may be less felt;" and in allusion to his attempting to lecture from notes, he remarked:—"Written lectures might be more correct in the diction and fluent in the style; but they would take up too much time, that may be rendered otherwise useful. I shall be as correct as possible, but perhaps a familiar style will prove more agreeable than a formal one, and the delivery more fitted to command attention." [11]

In 1747, in accordance with the plan which he had formed of establishing a regular medical school in the University of Glasgow, Cullen was appointed Professor of Chemistry. At the commencement of his second course of chemistry, he printed and distributed among his students, "The Plan of a Course of Chemical Lectures and Experiments, directed chiefly to the improvement of arts and manufactures, to be given in the Laboratory of the College, during the session 1748." At this time he specially directed his attention to investigate the application of chemistry to the useful arts. He suggested various improvements in the art of bleaching, and proposed an improved method for the manufacture or purification of common salt. Some of the difficulties which he had to encounter in his efforts to present a comprehensive account of chemical phenomena were thus stated by himself:—

"Chemistry is an art that has furnished the world with a great number of useful facts, and has thereby contributed to the improvement of many arts; but these facts lie scattered in many different books, involved in obscure terms, mixed with many falsehoods, and joined to a great deal of false philosophy; so that it is no great wonder that chemistry has not been so much studied as might have been expected with regard to so useful a branch of knowledge, and that many professors are themselves but very superficially acquainted with it. But it was particularly to be expected, that, since it has been taught in Universities, the difficulties in this study should have been in some measure removed, that the art should have been put into form, and a system of it attempted—the scattered facts collected and arranged in a proper order. But this has not yet been done; chemistry has not yet been taught but upon a very narrow plan. The teachers of it have still confined themselves to the purposes of pharmacy and medicine, and that comprehends a small branch of chemistry; and even that, by being a single branch, could not by itself be tolerably explained. I do not choose the invidious task of

[11] Dr. John Thomson's *Life of Cullen*, Vol. I., pp. 4-28.

derogating from established reputations; but were it necessary, I could easily show that the most celebrated attempts towards a system or course of chemistry are extremely incomplete, as examining but a few of the objects of chemistry; that of those examined a very scanty and imperfect account of their relations to other bodies is given, and that, even what is given, is in a method inconvenient and faulty. Now this is the case with the generality of the books on chemistry; but I must take notice, however, that Dr. Stahl is one who has endeavoured to avoid these faults; he has taught chemistry with a more general view, and attempted to collect the chemical facts, and to arrange them in better order. . . . From what I have said, you will judge of the state of chemical learning, and what a difficult task I undertook when I engaged to teach chemistry, and it is very necessary to tell you, that I did not engage in it from any confidence of my abilities, but because it was thought proper to be undertaken, and nobody else was found to do it; and if I can be so lucky as to engage you to apply to the study, I dare say that the more you become acquainted with it, the less will my performance need an apology with you."

In the end of the year 1753, he sent to the Philosophical Society of Edinburgh a paper entitled, "Some Reflections on the Study of Chemistry, and an essay towards ascertaining the different species of Salts." This paper contains more wide and precise information touching the general properties and relations of the different species of salts than is to be found in any chemical work of the period; and especially the distinctive characters and compounds of soda, a substance then not generally admitted in this country to differ specifically from potash.[12]

Cullen's reputation was rising rapidly, and in 1751 he was formally appointed to the Chair of the Practice of Medicine in the University of Glasgow, but also continued to lecture on chemistry as well as medicine for the next five years. It was a bright period in the history of this University. Adam Smith was then delivering within its walls a part of the rich store of information which afterwards appeared in the *Wealth of Nations*, while Cullen was laying a better foundation for medicine and the progress of medical science.

But he was appointed Professor of Chemistry in the University of Edinburgh, and entered upon the duties of the chair in the beginning

[12] Thomson's *Life of Dr. Cullen*, Vol. I., pp. 57, 58.

of the year 1756. He then extended and carefully improved his lectures on chemistry, and prepared as an introduction to his course seven lectures giving a history of chemical science, which are fine specimens of that branch of scientific exposition. He occupied the chair of chemistry in Edinburgh ten years, but his class was not a very large one. During his first course of lectures the number of students was only seventeen; in the second it rose to fifty-nine; and it gradually increased, the highest number reached in one session being one hundred and forty-five. He also commenced to deliver clinical lectures in the Royal Infirmary in 1757, instead of Professor Rutherford, whose health was failing.

In 1766 he was appointed to the chair of institutes of medicine; his predecessor in the chair was an able man.[13] But Cullen taught the institutes of medicine with marked success. He divided the main subject into three divisions—physiology, pathology, and therapeutics—embracing the consideration of health, disease, and remedy. After delivering his historical introduction, he commenced thus:—

"Medicine is the art of preventing and curing diseases. The common language is that 'Medicine is the art of preserving health and of curing diseases;' but I have said, the art of preventing diseases; for although I do not deny that the preserving of health is the object of the physician's care, yet I maintain that there is truly no other means of preserving health but what consists in preventing diseases. Every other idea is false, and has led to superfluous, very often dangerous, practice. I say, that health being properly understood, we cannot add to it, nor increase its powers. There is never room for our art, but when there is some defect in the constitution—some bias and tendency towards disease; and it is only by preventing this tendency, by correcting these defects, that is, by preventing disease, that we can preserve health.

"What we call the practice is the art applied to particular diseases and persons. But before considering the application of this art to

[13] Robert Whytt was one of the luminaries of the rising medical school; and was professor of the institutes of medicine from 1747, till his death in 1766, in the fifty-second year of his age. He is the author of a treatise *On the Vital and other Involuntary motions in Animals*, which attracted the attention of many physiologists; and of a work *On Nervous, Hysteric Diseases, and on the Sympathy of the Nerves*, a treatise in advance of the age, which contributed to the progress of medical science in the latter part of the eighteenth century.

particular diseases, certain general doctrines are necessary to be premised, which are called the Institutes of Medicine." He describes physiology thus :—

"The doctrine which explains the conditions of the body and of the mind necessary to life and health, is called Physiology, or the Doctrine of the Animal Economy—I mean that physiology considers the matter of which the body is formed in its mixed, in its aggregation, and, especially, in its organisation or mechanism. With regard to the conditions of the body, physiology considers everything that natural philosophy, chemistry, or anatomy teaches with regard to it. But you are to observe that philosophy, chemistry, and anatomy consider the state of the body, and its several parts, abstracted from its several effects. The business of physiology is only to explain the conditions which these several sciences point out as applicable to the exercise of the functions of the body.

"I have added here a particular to my physiology that is not common—and 'of the mind.' . . . However the condition of the mind may ultimately arise, we often do see conditions of mind arise, that we cannot trace to a corporeal cause ; while at the same time they may produce very considerable effects upon the bodily state; so that it was necessary to say physiology referred to the conditions of the mind, as well as to those of the body. So far from being able to neglect the mind, the most considerable functions are connected with particular operations . . . and, indeed, I find that the conditions of the human mind must engage our intention more than they have done hitherto."[14] Accordingly he treats at considerable length on sensation and the functions of the brain.

On the death of John Gregory in 1773, Cullen became professor of the practice of physic, and held this chair for seventeen years with great advantage to the medical school, the University, the nation, and the world. He resigned his chair in the end of the year 1789, and he died on 5th February, 1790. He had been a professor in the medical faculty of the University of Edinburgh for a period of thirty-four years, and a lecturer and professor in the University of Glasgow for nine years, so that he had been a hard-working professor for a period of forty-three years. As a teacher he was remarkably successful, he had all the qualifications of a great expositor—vast and accurate knowledge, analytic powers of the first order, a mastery of method and systematic development, and a copious command of

[14] Cullen's Works, Vol. I., pp. 3-6; 1827.

appropriate language; an intellect of a philosophic and original cast which threw new light on many points; in short, a genius who never failed to make every subject which he handled clear and interesting. He was highly respected and beloved by all earnest students of medicine, and many of his pupils rose to eminence.[15] He took a keen interest in everything connected with or bearing on medical science, and his sagacity, judgment, and practical experience were invaluable to the Universities of Glasgow and Edinburgh, and to the nation.

His chief works are:—(1) *Institutions of Medicine*, 1777; (2) *First Lines of the practice of Physic;* (3) *Synopsis Nosologiæ Methodicæ*, 1785; (4) *Treatise of the Materia Medica;* (5) Various lectures and papers. Both his teaching and his writings have had great influence in advancing medical science, in almost every branch, and especially the nervous system of the human organism. This was owing not simply to the number of new facts which he discovered or the generalisations which he formed, but chiefly to the original characteristics, and the method of his teaching, which was admirably calculated to interest and arrest the attention and stimulate the

[15] I shall give an indication of his method from his *Nosology*:—"The several diseases to be treated of are determined by the nosology. What I call a genus is everywhere to afford to me a particular subject of discourse; and under each of these heads I shall treat the following subject.

"First, I am to give what may be called the History of the disease—of the genus, that is, and an account of all the special phenomena which constantly attends the appearance of such a disease, as they are severally combined together, or occur in succession. Secondly, the investigation of the proximate cause, on the knowledge of which the cure of the disease is chiefly and almost unavoidably founded. . . . Thirdly, from the phenomena of the disease, and with a view to the conclusion respecting the proximate cause. I am next to enter into a critical disquisition with regard to the proper character and limits of every genus, and its division into species and varieties. . . . Fourthly, we shall proceed to the consideration of the remote causes, upon which the prevention of diseases chiefly depends. . . . Fifthly, we shall proceed to the prognostic. . . . The sixth and last article is that for which all the others are intended, viz., the method of cure. . . . You have thus, gentlemen, my plan for treating the several heads—the several genera of diseases which are to enter into my course. . . . I wish to make you critics in nosology; but this I shall perhaps find a difficult task. Perfect division and definition is the summit of human knowledge in every part of science, and requires not only the clearest but the most comprehensive views, such as, with respect to diseases, we can arrive at only by often-repeated exercises and much study."—*Works*, Vol. I., pp. 440-445.

powers of those who came under its influence. His own mind was comprehensive, the extent of his acquired information even outside of his special profession was vast and varied, and his knowledge of recorded philosophic thought was remarkable.

Dr. John Gregory succeeded his father as professor of medicine in King's College, Aberdeen, in 1755; and, in 1766, he was appointed professor of the practice of physic in the University of Edinburgh. In his introductory lectures he treated on "The Duties and Qualifications of a Physician," and these were afterwards published. In 1770, he published his *Elements of the Practice of Physic*, for the use of his class. He died in 1773, in the forty-ninth year of his age; and was succeeded in the chair by Dr. Cullen. He was the author of the well-known work, *A Comparative View of the Faculties of Man with those of the Animal World.* His son, James Gregory, also became a professor.

James Gregory was born at Aberdeen in 1753, and went to Edinburgh with his father; he was the great grandson of James Gregory the celebrated Professor of Mathematics, and himself the sixteenth Professor that had sprung from the loins of David Gregory of Kinairdy.[16] He was appointed Professor of Institutes of Medicine in 1776; and in 1788, he published a text-book for the use of his class, entitled *Conspectus Medicinæ Theoreticæ*, which was much admired for its elegant Latinity; it was adopted as a text-book in several of the German Universities. On the retirement of Dr. Cullen, Gregory was transferred to the Chair of the Practice of Physic, which he held till his death in 1821. Thus he had taught in the University for the long period of forty-five years. He took an active part in questions touching Infirmary management, and engaged in hot disputes with his brethren on these matters.

Dr. Andrew Duncan, a son of a merchant, was born at St. Andrews on the 17th October, 1744. He entered the University of St. Andrews, and graduated Master of Arts in 1762. He then proceeded to the University of Edinburgh and pursued his medical studies, and completed his course in 1769. In the absence of Dr. Drummond, during the sessions of 1774-5 and 1775-6, Duncan delivered lectures on the theory of medicine in the University of Edinburgh, while he undertook the editorship of a periodical work entitled *Medical and*

[16] It appears to me that an account of the careers of the distinguished members of this family of Gregories would form a very interesting subject for a volume or two among the tomes to be printed by the New Spalding Club.

Philosophical Commentaries. This publication contained an account of the best new books on medicine, and the cognate branches of science; medical cases and observations; and the most recent medical intelligence. It was published quarterly, forming one volume annually, and continued till 1795 under his editorship, when it had extended to twenty volumes. Subsequently he continued it under the title of *Annals of Medicine* to 1804, when he ceased to act as editor. In 1805 its title was changed to the *Edinburgh Medical and Surgical Journal*, and under the editorship of Dr. Duncan's son, it became one of the leading medical Journals in Europe.

On the transference of Dr. Gregory to the chair vacated by Dr. Cullen, Dr. Duncan was appointed to the chair of the Institutes of Medicine in 1790. He was an able and successful professor, and much esteemed. The style of his lectures was clear and direct, and excellent specimens of instructive exposition. He showed great interest in his pupils, often inviting them to his house, and cultivating a kindly intercourse with them. His sympathies were wide and warm. Having often seen the sad condition and suffering of insane persons, he originated a plan for the erection and endowment of a Lunatic Asylum, which he brought before the Royal College of Physicians of Edinburgh in 1792. After many difficulties had been surmounted, a petition was presented to the King, who granted a royal charter in April 1807, under which a Lunatic Asylum was built and opened at Morningside. In September 1808 the Town Council of Edinburgh presented Dr. Duncan with the freedom of the City, as a public recognition of his services to the community by the establishment of the Lunatic Asylum, and also a public Dispensary. After a long and useful life, he expired on the 5th of July, 1828, in the eighty-fourth year of his age. He was the author of a considerable number of works, including *Elements of Therapeutics*, *Medical Commentaries*, *Medical Cases and Observations*, *Heads of lectures on the Theory and Practice of Physic*, *Essay on Consumption*, and other treatises. He bequeathed to the Royal College of Physicians of Edinburgh, one hundred volumes of practical observations in his own hand-writing, which he had used as notes for his clinical lectures.

His son, Andrew Duncan, was born at Edinburgh on the 10th of August, 1773. While a boy, he had pored over medical books; and at the age of fourteen he entered on an apprenticeship of five years with Messrs. A. & G. Wood, Surgeons. Afterwards he went through the courses of Arts and Medicine, at the University of Edin-

burgh, and graduated M.A. in 1793, and M.D. in 1794. Subsequently he studied a winter in London; and made two sojourns to the Continent, staying in each of the notable medical schools of Germany and Italy long enough to study under the professors, visit the hospitals, and acquire some knowledge of the languages and literatures of these countries. On returning to Edinburgh, he joined the College of Physicians; and issued his great work on materia medica, entitled the *Edinburgh Dispensatory*, which for many years was a standard authority in the medical schools of Europe. He was appointed professor of Medical Jurisprudence in 1807; as stated in a preceding page, he was editor of the *Edinburgh Medical and Surgical Journal*. His lectures in the chair, and the papers which he produced in his *Journal* on this subject excited much interest both among his students and the medical profession. He taught in this chair for thirteen years; and in 1819 he was appointed professor of the institutes of medicine, which he held for two years. In 1821 he was transferred to the chair of materia medica, of which he was an able and careful teacher till 1832. As a professor in three chairs, he was remarkably successful and industrious; and made continual additions to his courses of lectures. He was also a very active and efficient member of the Senatus; and rendered invaluable service as a member of "the College Commission" for rebuilding the University. Besides the important work mentioned above, he contributed many articles on medical subjects to his own *Journal*, to the *Encyclopædia Britannica*, and the *Edinburgh Review*. His experiments on Peruvian bark, and on other substances contributed to advance pharmaceutical science. After a career of incessant and useful work, he died in 1832, at the age of fifty-nine.

As stated in a preceding page, Dr. Monro, the first Professor of Anatomy, was succeeded by his son, Alexander Monro. He was born in 1733, and educated in Edinburgh. After taking his degree in the University, he proceeded to London, Leyden, Paris, and Berlin, and in these cities he spent two years and a half in extending and completing his medical studies.

He returned to Edinburgh in 1758, and shortly after entered on his duties as Professor of Anatomy. He began his course of instruction in the University with vigour and boldness, and it was at once seen that he was master of his subject and of the art of expounding knowledge. His style was easy, clear, argumentative, and impres-

sive; and from the first his career through half a century was a marked success.

The number of students attending his courses of lectures continued to increase; yet he found time to carry on a large practice, being one of the leading physicians of his day, and he was often consulted in important surgical cases. He also found time to produce works of original research in anatomical science; and thus raised his fame at home and abroad, and contributed to extend the reputation of the Edinburgh medical school.

Omitting several of his papers and minor publications, Monro's chief works are :—(1) *Observations on the Structure and Functions of the Nervous System*, which appeared in 1783; (2) *The Structure and Physiology of Fishes explained and compared with those of Man and other Animals*, 1785; (3) *Experiments on the Nervous System, relative to the Nature and Effects of Animal Electricity*, 1793; (4) *Observations on the Muscles, and particularly on the Effects of their Oblique fibres*, 1794; (5) *The Brain, the Eye, and the Ear*, 1794.[17] These works gave him a reputation as an able anatomist. But it may be remarked that he had no difficulties to overcome, that he had only to step into a ready-made position and every advantage to start with, and that in such circumstances success was comparatively easy; nevertheless, he held his place with distinction and merit, alongside a body of able and brilliant colleagues and contemporaries, which is the greatest praise that can be given him. He died in 1817, at the advanced age of eighty-four years.

His son Alexander was appointed Joint-Professor and successor to his father in the Chair of anatomy, and from 1808 to 1846 he discharged the duties of the Chair. Thus the three Monros in succession held the Chair of Anatomy in the University of Edinburgh for a period of one hundred and twenty-six years: the first Monro occupied it from 1720 till 1758, the second from 1758 to 1808, and the third from 1808 till 1846, when he retired.

The third Monro was an accomplished man, fond of paintings, and spoke Latin fluently. But it was recorded that his talents as a teacher of anatomy were not equal to that of his father or his grandfather. The circumstances, however, were changed: there was then a greater number of men well qualified to teach anatomy and surgery,

[17] Professor Struthers in his *Historical Sketch of the Edinburgh Anatomical School*, states that MS. volumes of notes of Monro's lectures on anatomy, physiology, and surgery are preserved in many private and public libraries.—P. 32.

and the spirit of the time had become more critical and exacting than it was a hundred years before. Remembering this, there seems to be some ground, not for reversing the accepted verdict, but of somewhat modifying the opinion of the merits of the third Monro.

His writings are numerous and manifest great industry, if not original powers. The following are his most important works :— (1) *Dissertation on the varied direction of the Fibres of the Muscles*, 1812 ; (2) *Elements of the Anatomy of the Human Body*, in two volumes, 1825 ; (3) *The Anatomy of the Brain, with some Observations on its Functions*, 1831 ; (4) *Observations on the Different Kinds of Small Pox*, 1818. He died in 1859, at the great age of eighty-five years.

On the retirement of Monro, in 1846, Mr. John Goodsir was appointed professor of anatomy. He had gained some experience as an extra-mural lecturer, and was a remarkably successful teacher ; he rendered his special subject more interesting by extending the scope of illustration to allied branches of science. He died in 1867, and was succeeded by William Turner.

During the greater part of the period under review, there was much extra-mural teaching in Edinburgh, and sometimes very able men engaged in it ; I can only, however, notice a few of them. The elder Dr. Duncan, noticed in a preceding page, was among the first extra-mural lecturers on medicine in Edinburgh. He commenced lecturing extra-murally on medicine in 1775, and continued it for fifteen years, and attracted a considerable number of students to his class. John Bell, a distinguished anatomist and surgeon, was born in May, 1763. After finishing his medical education in Edinburgh, he travelled for some time in Russia and the north of Europe, but returned to Edinburgh in 1786, and was entered as a fellow of the Royal College of Surgeons. In 1787, he commenced lecturing on surgery and midwifery, and his lectures were numerously attended. But it seems that some jealousy existed among a few of the professors of the University towards the lecturers of the Surgeons' Hall ; accordingly Bell was vehemently assailed by pamphlets and squibs spread over the city. The assailants, as often happens, had greatly under-estimated the powers of their enemy ; for in his replies to their attacks he wielded his weapons with such force and effect that his blows staggered some of them and surprised them all, insomuch that on the main issue he won the day. Bell continued to teach anatomy and surgery till the last year of the eighteenth century, when he was deprived of his connection with the Surgical Hospital ; he then

retired and devoted himself to practice, and to the composition of his works. As a practitioner he attained the position of the leading operating and consulting surgeon of his time in Edinburgh; and his reputation drew patients from all parts of Britain and the Continent. He was also a cultured man, well versed in ancient and modern literature, a good musician, and skilful artist, while as a teacher, he was a ready and polished speaker, and master of a bold and vivid style. He died at Rome in 1820, in the fifty-seventh year of his age.[18]

His chief works are:—1. *The Anatomy of the Human Body*, published in 1793-97, in three volumes, which contained the most complete view of the progress and discoveries in anatomy up to the date of its publication. 2. *Engravings of the Bones, Muscles, and Joints*, illustrating the first volume of his *Anatomy of the Human Body;* they were drawn and engraved by himself, and appeared in 1794. 3. *On the Nature and Cure of Wounds*, 4. *Principles of Surgery*, 1801-8, in three volumes.

He taught his younger brother Charles Bell[19] anatomy and surgery; and when John retired he continued to instruct his class for several years. But Charles Bell went to London in 1804, to seek his fortune in a wider sphere, and for years he had to struggle with many difficulties. He began to teach in London with three of a class, and it was long ere it reached the number of forty. In 1811, he became one of the lecturers in the Hunterian School of Anatomy in Windmill Street, and in 1814 he was appointed surgeon to the Middlesex Hospital. At length he attained a high reputation in London both as a teacher and man of science. In 1836, the Chair of Surgery in the University was offered to him, and he accepted it and returned home.

A Chair of Clinical Surgery was instituted in the University of Edinburgh, 1803; at the same time the College of Surgeons established a Chair of Surgery. But the Chair of Surgery in the University was reconstituted in 1831, and the same year a Chair of Pathology was established. Thus Sir Charles Bell was the second

[18] Professor Struthers' *Historical Sketch of the Edinburgh Anatomical School*, pp. 39-42. "He was the reformer of Surgery in Edinburgh. He was not only a bold and dexterous operator, but combined all the qualities, natural and acquired, of a great surgeon to an extraordinary degree; he was original and fearless, and a thorough anatomist; he had intellect, nerve, and also language —was master alike of head, hand, and tongue or pen; and he was laborious as well as brilliant."—*Ibid.*, p. 43.

[19] Born in 1774; died in 1842.

Professor of Surgery in the University, after a separate Chair was assigned to it, although a Chair for Military Surgery was established in 1803, it was abolished in 1823. During the reign of the Munros they claimed the exclusive right of being Professors of Surgery as well as Anatomy within the walls of the University, and this delayed the establishment of a Chair of Surgery.

Sir Charles Bell discharged the functions of the Chair of Surgery with marked ability and success for five years; and also worked at his writings and researches. He died on the 27th of April, 1842. He was among the greatest men that have ever taught in this University, and the only regret is, that it was so long of securing his service. His researches and discoveries touching the nerves and the nervous system are well known, and were recognised throughout Europe long since. He was not only great in the science of the human organism in all its branches, but also a cultured and accomplished gentleman, skilled in the highest and most delicate operations of mind and hand.

Sir Charles' works are:—(1) *System of Dissections*, in three volumes, 1798-1803; (2) *Engravings of the Arteries*, 1801; (3) *Engraving of the Nerves*, 1801; (4) *Engravings of the Brain*, 1802; (5) *The Anatomy of Expression in Painting*, 1806; (6) *System of Operative Surgery*, in two volumes, 1807-9; (7) *On Diseases of the Urethra*, 1810; (8) *Engravings of Specimens of Morbid Parts*, 1813; (9) *Gunshot Wounds*, 1814; (10) *Surgical Operations*, in two volumes, 1816-18; (11) *On the Forces which circulate in the Blood*, 1819; (12) *On the Nervous System*, 1821; (13) *Illustrations of the Great Operations in Surgery*, 1821; (14) *Treatise on the Diseases of some of the Internal Organs*, 1822; (15) *Observations on Injuries of the Spine, and of the Thigh Bone*, 1824; (16) New edition of John and Charles Bell's *Anatomy and Physiology*, 1829; (17) Bridgewater Treatise, *On the Hand*, 1833; (18) *Institutes of Surgery*, arranged in the order of lectures delivered in the University of Edinburgh, in two volumes, 1838; (19) *Practical Essays*, in two volumes, 1841; (20) Letters to the Members of Parliament for the city of Edinburgh, on two Bills before Parliament, for improving the medical profession.

Regarding other extra mural lecturers, Dr. John Barclay lectured on anatomy in Edinburgh from 1797 to 1825, and by his attention and marked ability attracted a considerable number of medical students. From 1804 onward he had a class of about three hundred. He also published several treatises on anatomical and physiological

subjects. Barclay was a wit as well as a man of science, of which the following is a characteristic specimen:—"Gentlemen, while carrying on your work in the dissecting room, beware of making anatomical discoveries, and above all beware of rushing with them into print. Our precursors have left us little to discover. You may perhaps meet with a trifling supernumerary muscle or tendon, a slight deviation or extra branchlet of an artery, or perhaps a minute stray twig of a nerve, that will be all. But beware; publish the fact, and ten chances to one you will have it shown that you have been forestalled long ago. Anatomy may be likened to a harvest field. First come the reapers, who, entering upon untrodden ground, cut down great stores of corn from all sides of them. These are the early anatomists of modern Europe, such as Vesalius, Fallopius, Malpighi, and Harvey. Then come the gleaners, who gather up ears enough from the bare ridges to make a few loaves of bread. Such were the anatomists of last century, Valsalva, Contunnius, Haller, Winslow, Vieg d'Azyr, Camper, Hunter, and the two Monros. Last of all come the geese, who still continue to pick up a few grains scattered here and there among stubble, and waddle home in the evening, poor things, cackling with joy because of their success. Gentlemen, we are the geese." [20]

Dr. Gordon lectured on anatomy in Edinburgh from 1809 to 1819, and he was the author of several treatises. In the second quarter of the present century, Dr. Knox, the morphological anatomist, attained great celebrity as a lecturer on anatomy. To his dissecting room the victims of Burke and Hare were brought as subjects, but without any connivance of foul play on his part. For some time his class reached five hundred students. So much touching extra mural lectures.

Dr. John Thomson, a son of a silk weaver of Paisley, was born in 1765. His father wished him to enter into business with himself, but his mental faculties and aspirations rose above such employment. He privately acquired some knowledge of Latin, and his father allowed him to become an apprentice to a local medical practitioner. In 1787 he attended the medical classes at Glasgow, and afterwards he studied under Munro and Blackwood at the University of Edinburgh. He was appointed assistant-apothecary to the Royal Infirmary of Edinburgh in 1790. In 1798 his edition of Fourcroy's *Elements of Chemistry and Natural History* appeared. Lord Lauder-

[20] Sir R. Christian's *Recollections.*

dale came to Edinburgh in 1799 to study chemistry, and Thomson assisted him, and a warm friendship arose between them. He continued to practise surgery attentively, and was admitted a Fellow of the Royal College of Surgeons. In 1800 he issued a pamphlet entitled "Outlines of a Plan for the Regulation of the Surgical Department of the Royal Infirmary." He was then appointed one of the Surgeons of the Infirmary, and commenced to deliver clinical lectures, and also courses of systematic surgery in a private theatre. In 1804 he was appointed Professor of Surgery to the Royal College of Surgeons; while in 1806 he was encouraged by Lord Lauderdale to apply for a Commission to be Professor of Military Surgery in the University of Edinburgh. The Great European war had created an unusual interest in this subject. Lord Spencer, the Home Secretary, after an interview with Thomson, created the Chair, and appointed him as the first Professor. As mentioned in a preceding page, the Monros claimed a monopoly of teaching surgery in the University, and consequently it was treated as a mere appendage to anatomy, and not systematically taught. Thus Thomson introduced a very important innovation in the Edinburgh School. He admitted students without fee to his lectures, and in one session about two hundred persons embraced this privilege. In 1813 his Lectures on Inflammation appeared, which exhibited the pathological and practical doctrines of medical surgery. This work was widely circulated, and translated into German, Italian, and French. At the close of the war in 1814, he made a tour among the hospitals and medical schools of the Continent; while the following year, immediately after the battle of Waterloo, he was commissioned to inspect the condition of the wounded soldiers in Belgium. He performed this duty with the utmost care, and rendered much assistance to the Army-Surgeons at Brussels. During the following winter his lectures in Edinburgh were well attended, as the class numbered two hundred and eighty, of whom eighteen medical officers of the army and sixty-two of the navy were admitted gratis. It was recorded that his lectures were animated and eloquent, and excited much discussion touching the different modes of surgical treatment. His lectures were not limited to surgery, but also embraced medical pathology. Before 1820 he began to collect coloured pathological delineations, and engaged Mr. Carswell, who visited a number of hospitals and museums at home and abroad, to make water-colour drawings of morbid structures. This resulted in a valuable collec-

tion of pathological diagrams, which is still in the possession of the University, and was the first of its kind ever made.

On the death of Dr. James Gregory in 1821, Dr. Thomson became a candidate for the Chair of the Practice of Physic ; but he was unsuccessful, the Chair was given to Dr. James Hope. After this he resigned the Professorship of Military Surgery and commenced to deliver extra-mural courses of lectures on the practice of physic and pathology. He was invited to give evidence before the Universities Commission of 1826, and embraced the opportunity of strongly urging the necessity for a separate Chair of Surgery and one of Pathology in the University. He addressed a memorial to Lord Melbourne in 1831, pointing out the great advantages of the establishment of a Chair of General Pathology. Such a Chair was founded by the Government, and Thomson was appointed by the Crown as the first Professor of General Pathology. At the same time a Chair of Surgery was established in the University. Although Dr. Thomson was advanced in years, yet he commenced the work of his new Chair with remarkable vigour, and his teaching for several years was very efficient. But in 1835 his strength began to fail, and his lectures were delivered by an assistant till 1841, when he resigned the Chair. In his time, he had executed much useful and important work. He issued his edition of Cullen's works in 1827 ; the first volume of his *Life of Cullen* appeared in 1832, and the second completed by his son in 1859. Dr. Thomson died in 1846, at the advanced age of eighty-one.[21]

On the resignation of Professor Thomson, Dr. William Henderson was appointed to the chair of general pathology. In 1835-37 he had published a series of papers on the "Diseases of the Heart and the Larger Blood-Vessels." He was an expert stethoscopist, and used the microscope in pathological histology. Henderson, however, became heterodox, and embraced the homœopathic conception of medicine ; and in 1845 published his *Enquiry into the Homœopathic Practice of Medicine.* He then commenced business as a homœopathic practitioner, and proposed to follow this theory in his clinical ward in the Infirmary. This caused a great stir among the Medical Faculty in the University and the College of Physicians. Henderson resigned his post as a clinical teacher of medicine ; but continued his lectures in the chair of pathology. He obtained a large private practice, though several of his colleagues treated him bitterly.

[21] Memoir of Dr. Thomson, prefixed to second edition of *Life of Cullen.*

Owing to failing health, he resigned his chair in 1869; and died in 1872.

Dr. William R. Sanders was appointed to the chair of pathology in 1869. He had a high reputation as a physician, and a large consulting practice. He contributed a number of important papers to the *Edinburgh Medical Journal;* and had delivered lectures on the institutes of medicine in the extra-mural school. As professor of pathology, he introduced practical teaching, and trained the students to observe for themselves. The practical classes were instructed by Sanders' assistant, Dr. Hamilton, and the teaching of pathology in Edinburgh was raised to a higher stage. Professor Sanders died in 1881, at the age of fifty-three.

Shortly after Dr. Thomson resigned the chair of military surgery, Dr. George Ballingall was appointed professor of the subject. He was born in 1780, a son of the minister of the parish of Forglen in Banffshire. At an early age he went through the arts course at the University of St. Andrews; and subsequently studied medicine at Edinburgh, graduating as M.D. in 1803. In 1806 he entered the army as an assistant-surgeon, and saw service in India and other countries. He was at the capture of Java in 1811; and in 1815 he was with the army of occupation at Paris. He retired on half-pay in 1818, and commenced practice in Edinburgh. In 1823 he was appointed to the vacant chair of military surgery. After the accession of William IV., he received the honour of knighthood, and became Sir George Ballingall; he was surgeon to the Queen in Scotland, and had other honorary titles. He was an able professor, well informed, an excellent expositor, and a favourite with the students. He was the author of the following works:—*A Treatise on Fever, Dysentery, and Liver Complaints; Introductory Lectures to a Course of Medical Surgery;* and *A Treatise on Military Surgery.* He died in 1856. The chair of military surgery was then removed from Edinburgh.

Dr. William P. Alison was a son of the Rev. A. Alison, the author of the *Essay on Taste,* mentioned in a preceding chapter. He was educated in the University of Edinburgh, and was a great admirer of the writings of Dugald Stewart. He was appointed professor of the institutes of medicine in 1821; and he discharged the functions of this chair till 1842. In 1831, he published his *Outlines of Physiology,* and in 1833, *Outlines of Physiology and Pathology.* He was a successful teacher. In 1842, he was appointed to the chair of the

practice of physics, and shortly after he published his *Outlines of Pathology and Practice of Medicine.* He took a keen interest in the condition of the poor in Scotland; and in 1840, he published his *Observations on the Management of the Poor.* He advocated the introduction of a systematic poor-law act for the relief of the destitute. He was a kind, generous, and sympathetic gentleman, and devoted much of his means to charitable objects. His health failed and he resigned his chair in 1855, and died in 1859.

James Syme[22] was educated in the High School and the University of Edinburgh, and became assistant and demonstrator to Barclay, the extra-mural lecturer on anatomy. Afterwards he specially directed his attention to surgery, and studied for a year in Paris, practising surgical operations under Lisfranc. He returned to Edinburgh, and opened an extra-mural class in surgery, and his abilities and perseverence soon commanded success. In 1833, he became professor of clinical surgery in the University, and introduced a better method of instructing the students in the principles of treatment. He was a successful teacher, and attained a reputation as an operator. His chief work is his *Principles of Surgery,* which appeared in 1833; while he wrote upwards of two hundred papers on various points connected with his subject. He died in 1870, having held the chair for thirty-six years. His successor, Joseph Lister, introduced the antiseptic system.

Dr. Alexander Hamilton was professor of midwifery from 1780 to 1800. He was the author of several treatises on *Midwifery and the Management of Female Complaints,* which were translated into German. He was succeeded in the chair by his son, Dr. James Hamilton, who was a man of great energy, and an excellent professor. He had great experience and a vast store of information, thus his means for teaching were ample, and his class was well attended by students. In 1839 his work entitled *Practical Observations* appeared, which was recognised as an important book. He died in November 1839.

James Y. Simpson, the distinguished introducer of chloroform, was born at Bathgate, the youngest son of a small tradesman. It was resolved to give him a better education than the rest of the family. He entered the University of Edinburgh at the age of fourteen, and obtained a small bursary, attended the greater part of the arts course and the medical classes, passed the examination of the College of Surgeons in his nineteenth year, in 1830, and received his degree in

[22] Born in 1799; died in 1870.

medicine in 1832. Dr. Thomson, the professor of pathology, then appointed Simpson as his assistant; and on Thomson's advice he afterwards directed special attention to midwifery. In 1838, he became a lecturer on midwifery in the extra-mural school; and in 1840, was elected professor of midwifery in the University of Edinburgh.

Simpson was in every respect a successful and enthusiastic professor, and many of those who attended his class have risen to distinction. He first tried the effect of chloroform by inhalation in 1847. Shortly afterwards operations were performed under chloroform in the Infirmary of Edinburgh; and it soon came into general use. But Dr. Duncan, in a short treatise entitled *On the Mortality of Childbed*, 1870, argues against its use in childbed, except in extreme or particular cases; and he struggles hard to make out a case against Simpson's view of its application in this connection, but notwithstanding a parade of statistics his arguments are not conclusive.

He obtained a large private practice, and throughout his career he was incessantly occupied. Still he sometimes worked to good purpose outside of his profession. Archæology was a favourite subject of his, and his essays and papers in this department of research are admirable specimens of workmanship and style. He was knighted in 1866, and received honorary titles from Academies and Societies from the four quarters of the globe. After a short illness, he died in 1870, having occupied the chair of midwifery for a period of thirty years. He shed new lustre on the University of Edinburgh, and conferred a blessing upon the human race.

Robert Christison was appointed Professor of Medical Jurisprudence in 1821, and he has himself recorded that he was so ashamed of his first course of lectures that he destroyed them. He held this Chair twelve years, and, in 1832, was elected to the Chair of Materia Medica. Christison became an able and successful teacher, and altogether he was a Professor in the University for fifty-five years. He died in 1882. In 1829, his valuable *Treatise on Poisons* appeared; his *Dispensatory* was published in 1842, and he prepared the last edition of the *Edinburgh Pharmacopœia*. He is also the author of many papers on medical subjects.

There were other professors of the medical school of Edinburgh, whom I should have been happy to notice, but space is limited, and I can only add that the great reputation which this school has so long enjoyed is likely not only to continue to be maintained, but also

to rise still higher as time rolls on. The number of students in the faculty has been rising from year to year, and in the session of 1885-86 the number of matriculated students in the faculty of medicine was 1635.

In the preceding volumes some account was given of the University of Glasgow. It has passed through many vicissitudes. At the Reformation it was nearly extinguished, and after the Restoration it suffered so much for want of funds that three out of its eight Chairs had to be given up, and no relief came till after the Revolution of 1688.

At the opening of the second quarter of the eighteenth century the medical faculty of this University consisted of the following Chairs :—(1) Anatomy, founded in 1718, with which Botany was at first associated ; (2) Practice of Medicine, revived in 1712. But even with its two Chairs several of the most distinguished physicians and surgeons of the eighteenth century received the elements of their medical instruction in this University, and they have left memorable evidence of their gratitude for the early instruction which they had there received. After maturing his medical knowledge and gaining experience, Cullen returned to Glasgow in 1744, and by the exercise of his great talents and the force of genius led to the establishment of the Chair of Chemistry, and to the creation of lectureships in several other branches of medical science ; while by his noble efforts, well seconded by his colleagues, in a comparatively short time he raised the standard and established the reputation of the medical school of Glasgow. Dr. William Hunter, after a distinguished and honourable career in London, bequeathed his museum, books, and manuscripts to his Alma Mater. In a word, from the middle of the eighteenth century the medical school of Glasgow has continued to advance.

In the present century, the following chairs in this faculty have been instituted :—(1) Natural History, in 1807 ; (2) Surgery, in 1815 ; (3) Midwifery, in 1815 ; (4) Botany, in 1818 ; (5) Materia Medica, in 1831 ; (6) Physiology, in 1839 ; (7) Forensic Medicine, in 1839 ; (8) Clinical Surgery, in 1874 ; (9) Clinical Medicine, in 1874. Thus the faculty of medicine in the University of Glasgow now consists of twelve Chairs and a Lectureship on Diseases of the Eye.

But in this great city, medical science is also successfully taught by a body of extra-mural lecturers. Those in Glasgow whose lectures have been recognised by the University Court of the University of

Glasgow, for the purpose of graduating in medicine, are twenty-six in number; and these twenty-six gentlemen lecture on all branches of medical science, and many of them are highly distinguished teachers.

Before the middle of the present century measures were taken for the removal of the University to more extended buildings, and for this purpose the lands of Gilmorehill were secured—a fine elevated space of ground in the western part of the city. The new buildings were designed by the late Sir G. Gilbert Scott; and on the 8th of October, 1868, the foundation stone of these buildings on the Gilmorehill was laid by the Prince of Wales amidst manifestations of joy and rejoicing. They were opened for the classes in 1870.[23] These buildings have an imposing appearance to the eye; but the interior accommodation, and also the workmanship, are far superior to what one would imagine by simply looking at the outside of the buildings. The principal and a number of the professors have residences within the buildings; while each faculty has a special or main division of the buildings for itself, with splendid class-rooms and every other requisite of accommodation for effective teaching. The large room for holding examinations, the Senatus meeting-room, and the chapel are all that could be desired. The space of the buildings in which the large and valuable library is located has been calculated to be sufficient to hold the annually increasing number of volumes for many generations to come. The large, interesting, and valuable Hunterian Museum occupies the north side of the eastern quadrangle, and consists of two halls, the upper one being galleried; and it has been intimated that "visitors desirous of consulting in the Museum should, if possible, arrange to come between 2 and 4 P.M. Numismatists desirous of consulting the cabinet of medals should communicate with the keeper a few days before the date of their proposed visit."

The foundation-stone of the Glasgow Royal Infirmary was laid on the 18th of May, 1792,[24] and it was opened for the reception of

[23] The tower, however, for want of funds was not finished at first; but it was completed in 1888 by the Marquess of Bute, K.T., and is one of the highest towers in the kingdom.

[24] On occasion of laying the foundation, a religious service was held in St. Andrews Church, at the close of which a hymn written for the occasion was sung, and concluded thus:—

"Then let us join with heart and hand,
To raise this glory of our land,
Which shall to latest times declare,
To ease the wretched was our care."

patients in 1794. Clinical lectures are given in it by the surgeons and physicians. Shortly after the opening of the New University buildings, the Western Infirmary was erected, a large building measuring 500 feet by 240. It is situated in a fine, airy and open locality, and it has been authoritatively declared to be one of the best establishments of the kind in Britain. It contains 400 beds for medical and surgical patients, including wards for skin diseases, and one for diseases peculiar to females; it has also a full staff of physicians and surgeons. Several courses of clinical instruction are given. There are also in Glasgow an Eye Infirmary; Dispensaries for Diseases of the Skin and Ear; and in the Royal Lunatic Asylum, at Gartnavel, clinical instruction on insanity is given.

In short, Glasgow possesses all the requisites of a great medical school in an ample degree. In the session of 1884-85, the number of matriculated students in the faculty of medicine was 679; and with its many and invaluable advantages, this school should have a great and beneficent career before it.

The medical school of Aberdeen is a recent development. At the opening of the present century there was one professor of medicine in King's College, and in Marischal College there was one professor of medicine and a professor of chemistry. A chair of anatomy was instituted in 1839, and a chair of surgery the same year; and a chair of medical jurisprudence was established in 1857. In short, the late Dr. Pirrie, the first professor of surgery, the late Dr. Macrobin, Dr. Dyce, and Dr. Francis Ogston, were the founders of the Aberdeen medical school, as they first gave it a reputation in the second quarter of this century.

But it may be said that it was not till after the union of King's College and Marischal College, which was completed in 1860, that there was a well constituted and organised medical school in Aberdeen. After the union of the Colleges, the buildings of Marischal College were assigned to the classes of the medical faculty and the faculty of law; and though the accommodation for the medical classes was then more than sufficient, owing to the greatly increased number of students attending these classes in recent years, it has now become quite inadequate, and several of the professors experience difficulty in conducting their classes within the existing apartments.

Since this was written, a movement for the extension of Marischal College buildings has assumed a practical form. A plan of new buildings has been sanctioned, consisting of new class-rooms—em-

braced in the north and south wings of the extension scheme, a grand new graduation hall, heightening of the central tower, and other extensions. A large part of these has been erected.

The hall and the tower are characteristic parts of the new buildings. The most attractive feature of the hall is the fine memorial window in its east end, which is 32 feet in height and 28 feet in breadth. It is designed to illustrate the history of the College by a series of finely coloured heraldic and portrait representations. There are four tiers of panels in it, which are beautifully embellished with the armorial bearings of George Keith, fifth Earl of Marischal, the founder of the College; the armorial bearings of eleven Chancellors of the College; those of thirty benefactors of the College; and the portraits of a number of the distinguished alumni of the College and University. There are other ten windows in the hall—five on each side, which are decorated with various coloured emblems in a fine symmetrical style. The hall is a magnificent structure.

The tower is 248 feet in height. It is in clustered style, well formed, proportionate, and attractive to the eye. The tower and the hall were gifts to the University from the late Dr. Charles Mitchell, Newcastle-on-Tyne, who in all gave £32,000 to the University extension scheme.

At the date of the union of the Colleges four new chairs were established, namely, the chair of institutes of medicine or physiology, the chair of materia medica, the chair of midwifery, and the chair of botany; while the chair of natural history was also renewed. A chair of pathology was founded by Sir Erasmus Wilson in 1882. Altogether there are eleven chairs in the medical faculty of Aberdeen.

Courses of lectures and practical instruction are regularly given by the medical staff of the Royal Infirmary, and other institutions, on the following branches: clinical medicine, clinical surgery, pathological demonstrations, diseases of the skin, diseases of the ear and larynx, dental surgery, the eye and practical ophthalmology, sanitary science, and, finally, insanity.

The body of professors in the medical faculty of the University are able instructors; while the staff of the Royal Infirmary are well qualified and careful teachers of the special branches which they profess. The result is, that within the last thirty-five years the standard and reputation of the Aberdeen medical school has risen rapidly; and it has sent out a large number of admirably qualified

graduates, many of whom have taken a front rank among the eminent physicians and surgeons of the time.

Dr. Pirrie was a native of the parish of Gartly, in Aberdeenshire, and was appointed professor of surgery in 1839. He was a successful teacher, a clear and careful expositor of the principles of surgery, and for many years one of the surgeons of the Royal Infirmary. He had the reputation of being an able operator. He is the author of an elaborate work entitled *The Principles and Practice of Surgery*, the third edition of which appeared in 1873, thoroughly revised and enlarged. The work extends to forty-six chapters, and the whole subject is ably treated in a plain, simple, and clear style. As a very short specimen, the following is from his chapter headed "Injuries of the Brain"—the special point being concussion of the brain :—

"*Causes.*—The injury which is termed by British authors concussion of the brain, by French commotion, and in common parlance stunning, is produced by one or other of the three following causes : a blow, or a fall on the cranium itself, or a fall from a considerable height on some other part of the body, as the buttocks, or the feet, by which a sudden shock is communicated to the brain, through the medium of the vertebral column. I lately had under my care a mason, in whose case there were strongly marked symptoms of concussion, caused by his falling from the second floor of a house on his buttocks ; and I am at present attending to a female, who, in consequence of the horse becoming restive, jumped from the top of a cart loaded with hay, and alighted on her feet, sustained fracture of one leg and concussion of the brain. The spine in these circumstances is suddenly brought into a state of rest, and the head being still in projectile motion is forcibly struck against the summit of the vertebral column, the sudden jerk thus communicated to the brain occasions concussion."

The late Dr. Keith was one of the most eminent practical surgeons and lithotomists of his time. He acted for many years as one of the surgeons of the Royal Infirmary. Dr. Kerr and Dr. Fiddes were also able surgeons.

Dr. Alexander J. Lizars was professor of anatomy from 1841 till his death in 1863. He is the author of a text-book entitled *Elements of Anatomy*, which evinces considerable powers of classification and exposition. The late Dr. Francis Ogston, the first professor of medical jurisprudence in this University, who delivered lectures for a quarter of a century, and retired from the chair in 1883, was a

gentleman of vast experience and considerable culture. He published his lectures on medical jurisprudence in 1878, in two volumes ; and they contain an able and remarkably clear exposition of the subject. The work has been recognised at home and abroad as a high authority.

In the preceding part of this chapter attention has been directed to those specially engaged in teaching medicine in Scotland, and although my space is almost exhausted, still some notice should be given of a few other Scotsmen who have attained distinction in this profession. Dr. James Douglas [25] was one of the earliest and most distinguished teachers of anatomy in Britain. After completing his studies, he settled in London as a teacher, and attained great success. In 1707, he published his *Specimen of Comparative Anatomy*, and it gave the most correct account of the muscles which had up to that time appeared. In 1715, his *Specimen of Anatomical Bibliography* was published, in which he gives an account of the various works on anatomy, with sketches of their authors ; and in 1726, he published a treatise on lithotomy, under the title of *A History of the Lateral Operation for the Stone.* A second edition appeared in 1733, with an appendix presenting a comparative view of the methods of operating by different lithotomists, and especially that recommended by Cheselden. [26] Douglas also contributed a number of papers to the Royal Society, on the anatomy of some of the generative organs, and reports of various cases in surgery.

Dr. William Hunter was born on the 23rd of May, 1718, at Kilbride, in Lanarkshire. He was educated at the University of Glasgow, which he entered at the age of fourteen, and passed five years studying there. Afterwards he received assistance in the prosecution of his medical studies from Dr. Cullen at Hamilton, and in 1740, he attended the medical lectures in the University of Edinburgh. In the summer of 1741, he proceeded to London, and almost immediately began his great career as an assistant to Dr. Douglas ; but Douglas died in 1742. Hunter continued his course, and attained distinction as a lecturer and a practising physician, gained wealth and honour,

[25] Born in 1674 ; died in 1742.

[26] His brother, John Douglas, was surgeon to the Westminster Infirmary, and the author of several works. In 1736, he published *A Short Account of the state of Midwifery in London*, in which he severely criticised the works of Chamberlen and Chapman ; and in another publication he derided the obstetric forceps invented by Smellie.

and collected his remarkable museum, which he finally bequeathed to the University of Glasgow.

Dr. William Hunter's writings consist of a series of papers on several of the internal organs of the human body ; a few of his introductory lectures on anatomy which he left fully written out : but his principal work is *The Anatomy of the Human Gravid Uterus*, which appeared in 1775, and a more complete edition was issued by Dr. Baillie in 1794. As a teacher of anatomy he was deservedly celebrated. " He was a good orator, and having a clear and accurate conception of what he taught, he knew how to place in distinct and intelligible points of view the most abstruse subjects of anatomy and physiology. . . . He had the talent of infusing much of his ardour into his pupils, and if anatomical knowledge is more diffused in this country than formerly, we are indebted for this, in a great measure, to his exertions.[27] He died on the 30th March, 1783, in London.

William Cruickshanks, the son of an officer in the excise, was born at Edinburgh in 1745. He received the rudiments of his education at the schools of Edinburgh : and went through a complete course of medical study at the University of Glasgow. After devoting his attention for eight years to medical science, he proceeded to London and obtained the office of librarian to Dr. William Hunter. Shortly after Dr. Hunter appointed him as his assistant ; and ultimately admitted him as a partner in superintending his establishment in Windmill Street. On the death of Dr. Hunter, the students of the school presented an address to Cruickshanks and Dr. Baillie, requesting that they might assume the superintendence of the school, which they did. Cruickshank's work on *The Anatomy of the absorbent vessels of the Human Body* appeared in 1786, and it has been translated into several languages. He was also the author of a few other papers on points connected with his profession. He was an able anatomist, a skilful surgeon, and an exceedingly generous and benevolent man. He died in 1800.

John Hunter, a younger brother of the above, was born at Long Calderwood, in the parish of Kilbride, Lanarkshire, on the 13th of February, 1728. In 1748, he joined his brother in London, and commenced to work in the dissecting-room, under the instruction of his brother's assistant. In the summer of 1749, Dr. William Hunter

[27] *Account of the Life and Writings of William Hunter, M.D., F.A.S., and S.A.*, 1783.

obtained permission for his brother to attend at the Chelsea Hospital, under Cheselden, who was thus John Hunter's first teacher in surgery. In 1751, he entered as a surgeon's pupil at St. Bartholomew's Hospital, under Pott; in 1754, he entered St. George's Hospital as a surgeon's pupil; and two years later he served in the office of house-surgeon to this hospital. At this time he entered as a partner with his brother in the anatomical school, and a portion of the lectures was allotted to him; he had also to take his brother's place when he was absent. From the year 1759 to 1763 he served as a staff-surgeon in the army.

He then settled down in London, prosecuted his researches in anatomy and physiology, and delivered lectures on anatomy and surgery. In 1776, Hunter was appointed surgeon-extraordinary to the King. After a life of incessant research, toil in lecturing, in private practice, and in collecting his museum, he died suddenly on the 16th of October, 1793. His life has been written by Ottley, from whom I shall give a few brief quotations:—"Boldness and independence in the pursuit of truth, one of the striking characteristics of Hunter's mind, was well exhibited in his lectures. He attached no value to opinions, except they could be shown to be firmly based on fact. Fallacious reasoning he quickly saw through, and instantly demolished; while he was not more indulgent towards his own theories when he discovered them to be erroneous. . . .

"In forming an estimate of Hunter's professional character, and the influence which his labours have had on the improvement of surgery, we are not, as with ordinary minds, simply to enumerate the various practical amendments of which he was the immediate author. His claims are of a far higher nature; and inasmuch as he was the first who taught us to bring the lights of physiology to bear upon the practice of our art, and by his writings, his teaching, and his example stimulated the minds of numerous able followers to pursue the tract he had pointed out, he justly merits to be considered as the author of a new era in the history of our profession.

"In the character of a naturalist it is impossible for us to form a full estimate of Hunter's labours, either from his published works or from his incomparable museum as it at present stands. In the course of the numberless dissections which he prosecuted during thirty years of unwearied diligence he necessarily made a great variety of isolated observations, which, though not immediately applicable to the objects he had in view, would doubtless have constituted important contri-

butions to the general stock of knowledge in comparative anatomy. Such observations he always recorded carefully in appropriate volumes; but by Sir Everard Home's extraordinary destruction of his manuscripts, science has been deprived of these fruits of his industry, of which scarcely the smallest portion now remains in existence. But even in such cases where the records of his researches have been preserved, either in the form of preparations or by means of drawings forming part of his museum, the want of descriptive catalogues has often caused them to be overlooked, whilst more modern naturalists have been reaping the honour of discoveries which were due in the first place to Hunter.

"Nevertheless, though we cannot estimate the full extent of his labours, enough remains to entitle him to a place in the highest rank as a natural philosopher." [28]

A good edition of Hunter's works, in four volumes, edited with notes by Mr. James F. Palmer, and illustrated by a volume of plates, in quarto, was published in 1835-37. John Hunter was probably the greatest physiologist that Britain has produced, taking into account the extensive series of preparations contained in his museum and his writings. In reference to comparative anatomy Richard Owen said in 1837: "It appears to me that he marks a new epoch in its history, and that the historian of the natural sciences has just and sufficient grounds for regarding Hunter as the first of the moderns who treated of the organs of the animal body under their most general relations, and who pointed out the anatomical conditions which were characteristic of great groups or classes of animals; as one, in short, throughout whose works we meet with general propositions in comparative anatomy, the like of which exists not in the writing of any of his contemporaries or predecessors, save in those of Aristotle." [29]

In conclusion, the rise and progress of medical science in Scotland has been narrated in sufficient detail to indicate what she has contributed to this branch of knowledge; while the gradual development of the three centres or schools of medicine has been shown. The great work for medical science in the future will be sanitary progress and hospital organisation; in short, the exercise of medical knowledge and skill to prevent disease of every description.

[28] Hunter's *Works*, Vol. I., pp. 48, 135-136.

[29] Preface to Hunter's *Treatise on the Animal Economy*, Hunter's Works, Vol. IV., p. 11.

CHAPTER XLVI.

Progress of Education in the Eighteenth and Nineteenth Centuries.

AN account of the rise and progress of primary education in Scotland, and of the act of the Scottish parliament of 1696, which enforced the parish school system, was given in the preceding volumes; and that system continued with little variation through the eighteenth and nineteenth centuries till the introduction of the new Education Act in 1873, which placed the management and organisation of primary schools upon a different footing. There is little of national importance concerning the parish schools to record in the eighteenth century. But it should be specially observed, that even in the seventeenth century the general intelligence of the Scotch people was in advance of the surrounding conditions of their material civilisation; in other words, their moral and intellectual faculties were further developed and organised than their practical knowledge of the mechanical and industrial arts of life. This interesting social phenomenon became distinctly manifest before the end of the seventeenth century, as was shown in the last volume; and, by the middle of the eighteenth century, when the internal peace and order of the country became more assured, then the results of the previous moral and intellectual training of the nation appeared in every direction. Thus it was that Scotland started on a career of progress which has not only changed the face of the country, but also contributed to advance the industry of the civilised world, as has been indicated in this volume.

In the Highlands of Scotland, the old parish school system was ineffective, owing to various circumstances: (1). Some of the parishes were so large and the inhabitants so thinly spread over them that regular attendance at the school was impracticable; (2). No means were provided for teaching the Celtic boys and girls through their own language. Thus, when they entered the school, though they did not know a word of the English language, yet teachers of the schools usually spoke nothing but English, and taught from books entirely in English; so Highland boys had to learn a foreign language without

the least assistance from their mother tongue. Efficient teaching by this method was out of the question.

In the burghs and towns much interest continued to be taken in the education of the young. In the latter half of the eighteenth century, in Glasgow, the children were usually sent to the English school at five or six years of age; at seven or eight they were sent to learn Latin in the Grammar School; and at eleven or twelve they were enrolled at the College.[1] In the schools of other towns the age at which children entered was about the same as above.

The Government began to give annual grants in aid of education in 1834; the first grant amounted to £20,000, which continued till 1839, when the committee of the Privy Council on Education was instituted. Afterwards the annual grants were gradually increased; and from 1839 to the close of the year 1865, the total sum given to the primary schools of Scotland was £1,055,765, which was divided among the schools connected with the Established Church, with the Free Church, the Episcopal Church, and the Roman Catholic Church. These grants were made conditional on a certain amount of local subscriptions being raised, and the operation of this was extremely unsatisfactory; for the localities most in need of assistance seldom got it—the crowded districts in large towns, and the thinly-peopled rural districts unable to raise the required quota of local funds, got none of the grant. The result was that those least in want of Government money got most of it, while those most in need of it rarely got any.

Shortly after Government grants began, Government Inspectors of Schools were introduced into Scotland. At first there were only a few, but they multiplied rapidly. In 1864 there were ten Government Inspectors of Schools; six for the schools connected with the Established Church, three for the Free Church schools, and one for the schools of the Episcopal Church. In 1867 they had increased to thirteen; but, since the introduction of the new Education Act in 1873, the institution of Government Inspectors has rapidly developed. In 1879, there were upwards of forty Inspectors of Schools in Scotland, while at present there are over one hundred on this side of the Tweed.

The Free Church, for many years after the Disruption, gave a marked impetus to the development of education in Scotland. From 1843 onwards for a quarter of a century, a large number of Free

[1] Macgregor's *History of Glasgow*, p. 361.

Church schools were erected throughout the country. In 1862, she had three hundred and seventy-seven certificated male teachers, one hundred and eleven certificated female teachers, five hundred and ninety-four male pupil teachers, and two hundred female; while at this date the number of teachers in the schools connected with the Established Church was six hundred and thirty-two certificated male teachers, two hundred and fifty certificated female teachers, eight hundred and ninety male pupil teachers, and three hundred and eighty-five female. In 1865, the number of male certificated teachers actually employed in teaching in the Free Church schools was four hundred and forty-two, and twenty-three assistant teachers, one hundred and forty-five certificated female teachers, three hundred and eighty-one male pupil teachers, and one hundred and seventy-two female. At the same time in the Church of Scotland schools there were eight hundred and forty male certificated teachers actually employed in teaching, three hundred and fifty-one certificated female teachers, seven hundred and twenty-seven male pupil teachers, and three hundred and fifty female. Moreover, the Free Church has erected normal schools and colleges of her own; and thus she has contributed to advance education in Scotland.

Since the introduction of the Education Act in 1873, many excellent new schools have been built throughout the country. The enforcement of the compulsory clause of the Act has been rendered more practicable since the abolition of fees in the primary schools. In recent years, also, there has been some improvement in the method of teaching. In the year 1893-94, the money expended on education in Scotland amounted to one million and a half pounds, of which about one half came from the Imperial Exchequer, and the other from local rates.

Sabbath schools began to be formed in Scotland about the beginning of the present century, and within recent years they have been greatly developed. Each body of Christians has their own system or organisation of these schools, while there are a number of Sabbath schools in which all denominations are welcomed, and freely taught without distinction.

Reformatory schools began to be certified by Government in Scotland about the middle of the present century; and industrial and ragged schools began to be certified about the same period. Both classes of these have been established in the large towns of Scotland for a considerable number of years; as to whether they have

answered the ends originally contemplated, is a much disputed point, on which I must refrain from entering.

In the last volume I explained the course of education taught in the grammar or burgh schools; and it continued with little variation through the greater part of the eighteenth century. The teaching of geography was introduced into those schools in the beginning of the eighteenth century, and the elements of mathematical science began to be generally taught about the middle of that century. In 1761, astronomy and several other branches of physical science were taught in the Grammar School of Ayr, and in Perth Academy.[2] There was also a drawing-master in Perth Academy in 1777, and French was likewise taught in Perth in 1769, Haddington, in 1721, Stirling in 1755, Ayr in 1761, and in other towns. But English was not thoroughly taught as a special branch in the grammar schools till well through the present century.

A very marked improvement has been effected in the teaching in grammar and secondary schools within a recent period. The course of instruction in these schools usually embraces the following branches :—(1) Classics—Latin and Greek ; (2) Arithmetic and Mathematics ; (3) Science ; (4) English, French, and German ; (5) Vocal and Instrumental Music ; (6) Writing and Drawing ; (7) Elocution ; while in some schools Phonography, Freehand and Technical Drawing, and Handicrafts are also taught. Many of the gentlemen at the head of these schools in Scotland are able and highly qualified instructors and organisers, and are well seconded by staffs of competent teachers.

There are also a number of schools and institutions specially employed in technical and art teaching. Knowledge and skill in these branches is becoming more necessary as civilisation advances; in order to hold our own we must make the utmost effort.

After the notices and references to the teaching and writings of many of the professors given in the preceding pages, it would be superfluous to enter into long details of the Universities themselves; and I shall only touch briefly on a few points.

A Royal Commission was issued for a visitation of the Universities and Colleges of Scotland in August,1826, to which I referred in a preceding volume ;[3] this commission continued its sittings and investigations till the 28th of October, 1830, when their report was

[2] Burgh Records.

[3] Mackintosh's *History of Civilisation in Scotland*, Vol. II., p. 409.

finally revised and copies ordered to be printed. In the course of their inquiries they collected a vast mass of evidence which fills three very large volumes ; and anyone who desires to have ample information about the Scotch Universities, from their foundation to 1830, should consult these volumes. In 1837, a bill was brought into parliament which proposed to appoint a board of visitors for each of the Universities of Scotland. These boards were to act as executive commissions to carry out, with modifications, the recommendations of the royal commission ; they were to frame statutes and regulations, which, after receiving the sanction of the Privy Council, would then become law. But the proposal was vehemently opposed in Scotland, and the Government abandoned it.

In 1843, the Disruption of the Church came, and this event had a remarkable influence on the Scotch Universities. The Church of Scotland could no longer present a united front in her control of the Universities, and from that hour her hold upon them began to slacken. A movement for University reform was inaugurated; and, in 1853, a bill was passed in parliament which enabled Free Churchmen legally to hold chairs in the Scotch Universities. On the 22nd April, 1858, the Lord Advocate of Scotland brought before parliament a bill entitled, "An Act to make provision for the better government and discipline of the Universities, and improving and regulating the course of study therein, etc." ; this Act was passed on the 2nd of August. Its main provisions were the following :—

(1) The erection of a select body called the University Court, as one of the ruling bodies, for each University ; (2) a parliamentary grant of £10,000 per annum, to increase the professors' salaries and establish some new chairs ; (3) to provide for assistant professors ; (4) clauses providing for the amalgamation of the two Colleges of Aberdeen ; (5) the creation of University councils. The first thirteen sections of the Act laid down the future constitution of the Universities of Scotland ; and the fourteenth named and appointed an Executive Committee to carry the intention of the Act into effect, and to form ordinances for the regulation of the revenues, studies, degree systems, election of officers, and all other important points in the organisation of the four Universities. Their decisions were subject to the review of parliament and appeal to the Privy Council.

The commissioners held their first meeting on the 27th of August, 1858, and elected the Lord Justice Clerk of Scotland, Inglis, chairman of the commission. The commission continued in office for four

years and some months; they held one hundred and twenty-six meetings, and framed ninety-two ordinances, very few of which were disallowed. It was under this Act and ordinances that the Scotch Universities were ruled; or, in other words, the Universities are mainly controlled by the University Court, the Senatus and General Council, under the ordinances then framed. The following is a part of the general report of the commission in reference to future alterations of ordinances:—"While providing means for altering the commissioners' ordinances, where such alterations may be desirable, the Universities Act has been careful to interpose securities against rash change, by requiring the consent of the Chancellor and the Queen in Council. In this latter requirement the commissioners understand it to have been the intention of the legislature that the steps for effecting the alteration of an ordinance hereafter should be precisely similar to those which were necessary to its original sanction. It is obviously, they think, of importance that when any such alteration is proposed, the same publicity should be given, and equal opportunities for making objections to the proposed change afforded, as were required in passing the ordinance. In addition, however, to publishing any proposed change in the *Edinburgh Gazette*, and laying it before both Houses of Parliament, which would thus be necessary, the commissioners recommend that, before the decision of the Queen in Council is given, intimation should in every case be made to each of the Universities, so as to afford to any University which may consider itself interested in the change, an opportunity of expressing its opinion thereon. It is by no means impossible, they think, that a proposed change, although nominally affecting one of the Universities only, may in reality be one in which all have an interest. Thus it has been an important object of the Universities Act, to which the commissioners were specially directed to have regard, that as far as possible the conditions under which degrees should be conferred should be uniform in all the Universities of Scotland. To the attainment of that object the commissioners used their best endeavours, and they think it would be unfortunate if, now that a power of initiating alterations of the ordinances is vested in each University court, that power should be so exercised as to introduce a divergence from the uniformity which, in a great measure, the commissioners have succeeded in establishing."

Since this date a Royal Commission on the Scotch Universities

took evidence, and framed a report, which contained various recommendations.

In 1889, Parliament passed "An Act for the better Administration and Endowment of the Universities of Scotland." This act increased the number of the members of each of the courts of the Universities, and constituted them on a more popular basis. The powers of the court were also greatly extended, as the chief governing body in each University. The court was empowered to manage the whole property and administer the revenue of the University, to appoint professors to all the chairs in the patronage of the University, also lecturers and examiners: to review decisions of the Senatus Academicus; and to deal with all representations and reports from the Senatus and General Council.

This Act like the one of 1858, appointed an Executive Commission to carry out the intention of the Legislature. The commissioners have held many meetings, framed a considerable number of new ordinances, and are still proceeding with their work. An improvement in the administration of the Universities, better organisation, and the admission of important modern subjects in the courses of study, will widen the scope and tend to raise the standard and value of University education.

In connection with research, science, philosophy, art, and culture, libraries are indispensible. Edinburgh has at least five valuable libraries—The Advocates' Library, the University Library, the Writers to the Signet Library, the Library of the Royal Society, and a large free library. The Advocates' Library is the largest in Scotland, and is one of the five libraries which receives a gratis copy of every book published in the United Kingdom. The Signet Library is also a large and valuable one, especially in the historical and record department. The University Library contains about 155,000 volumes and 1000 MSS., many of which are valuable and curious.

The Library of the University of Glasgow contains upwards of 172,000 volumes, and a number of MSS. About ten years ago the University acquired the library of the late Sir William Hamilton, which amounted to 8,000 volumes, including many treatises on logic and metaphysics. This library is especially rich in works on mining, engineering, music, and medicine.

The Stirlings Library in Glasgow, established in 1790, contains upwards of 40,000 volumes; it has also a lending department and a reference department. It contains many valuable works, and a large

number of patents. Another reference library in the same building, called the Library of Baillie's Institution, was established in 1887 "in a hall reconstructed and fitted up for the purpose." Through the kindness of Mr. Mason, the late librarian, I had the pleasure of seeing and inspecting this reference library, and I saw at once, in looking round the shelves, that the works had been selected with remarkable discrimination and judgment.

The Mitchell Library in Glasgow was opened in 1877. It is a reference, consulting, and reading library, not a lending one. It contains upwards of 72,000 volumes, representing all branches of literature and science. In the historical department it is very complete and valuable, especially in British history; science and art is also well represented. Its rare collection of Scottish poetry and editions of Burns, were already mentioned.

The Library of the University of Aberdeen contains about 91,000 volumes and a considerable number of MSS. There are besides, six special or class libraries for the use of students. The Society of Advocates in Aberdeen have a pretty large library, containing many valuable works.

Many towns in Scotland have adopted the Free Libraries Act, among which may be mentioned Dundee, 1869; Paisley, 1871; Galashiels, 1874; Hawick, 1878; Thurso, 1875; Forfar, 1870; Inverness, 1877; Dunbarton, 1881; Dunfermline, 1882; and Aberdeen, 1884. The organisation and management of those libraries have already attained a remarkable degree of completeness, and much intelligence and skill have been brought to bear in forming the reference departments. There can be no doubt that they will prove a source of enjoyment and benefit to the people, by placing within the reach of every citizen the means of becoming acquainted with the thoughts and sentiments of the great minds of the past and present.

CHAPTER XLVII.

Progress of Agriculture in the Eighteenth and Nineteenth Centuries.

IN the early part of the eighteenth century agriculture was in a wretchedly backward state. The whole area under cultivation was comparatively small; even in the Lothians and the southern counties of the kingdom, only patches of what was called "infield" were under tillage. Oats and barley were the chief crops; wheat as yet was little raised; clover and rye-grass, potatoes and turnips, were hardly then introduced. The use of manure was little understood; loads were mostly all carried on horseback, and there was no cattle-feeding as now understood. The whole of the agricultural and farming implements were of the most primitive and rude description. The ploughs were made of wood, and long after this period timber-ploughs were used in some parts of Scotland; in fact, I have seen them working. The plough-wright made the body of the implement; it was then sent to the smith, who fitted it with two or three pieces of iron. The farm-steadings were in general little better than a collection of huts.

James Meikle, a country wright of Wester Keith, having learned the art of winnowing corn with a machine, and of making barley with the use of a mill, in Holland, brought to Scotland a pair of fanners, and the iron work of a barley-mill. About the year 1720, the barley-mill and the winnowing machine were set up at Saltoun. But the people were slow in adopting these machines in farming work. Andrew Meikle, a son of James Meikle, was an ingenious mechanic; and he settled at Houston Mill, in East Lothian, where he carried on the several occupations of a small farmer, a miller, and a mill-wright. He directed his attention to the improvement of agricultural machinery, especially to that connected with the thrashing, winnowing, dressing, and grinding of grain. He often travelled through the counties of Edinburgh and Berwick to repair and fit up mills. But his most important achievement was the invention of the thrashing-machine. Many attempts had been made before his time to invent a machine for thrashing corn, but without effect. After many years of thinking and planning, Meikle at last succeeded in

perfecting his thrashing-machine, to which he joined solid fluted feeding-rollers, and afterwards a machine for shaking the straw, fanners for winnowing the corn, and other improvements.

He erected his first thrashing machine on the new principle in 1787, for Mr. Stein of Kilbeggie, in the county of Clackmannan ; but the novelty of the experiment, and the doubts of the efficacy of the machine, induced Mr. Stein to impose the condition that if it did not answer the intended purpose, Meikle was not to receive any payment for it. This thrashing-machine, which was driven by water-power, proved highly satisfactory, and long continued in good working order. The second machine, which he erected the same year, was for Mr. Rennie, at Phantassie ; and he had so perfected it that it could be driven by water, wind, or horses, and this one was worked by the latter power. In 1788, Meikle took out a patent for his invention ; but it is sad to record that he did not reap those pecuniary advantages from his invention which a more bold and self-assertive man would have done. "Pirates fell upon him from all sides and deprived him of the fruits of his ingenuity, even denying him any originality whatever. Mr. Smeaton (the famous engineer) knew Meikle intimately, and frequently met him in consultation respecting the arrangements of the Dalry Mills, near Edinburgh, and other works ; and he was accustomed to say of him, that if he had possessed but one-half the address of other people, he would have rivalled all his contemporaries, and stood forth as one of the first mechanical engineers in the kingdom."[1]

The thrashing-machine was one of the greatest benefits ever conferred upon the husbandman : it effected a vast saving of corn and of labour. "It is calculated to have effected a saving, as compared with the flail, of one hundredth part of the whole corn thrashed, or equal to a value of not less than two millions sterling, in Great Britain alone." Within twenty years after the date of Meikle's patent, upwards of three hundred thrashing-mills were erected in East Lothian alone, at an estimated cost of about forty thousand pounds ; and soon after, it was generally adopted in England and throughout the civilised world.

Meikle also introduced improvements in working the sails of windmills, and important improvements in water-wheels, which on one occasion proved effectual in carrying out a remarkable undertaking in Perthshire. This was the washing away into the river Forth

[1] Smiles' *Lives of the Engineers*, Vol. II., pp. 105-114.

of about two thousand acres of peat moss, and thus laying bare an equal surface of arable land. The moss of Kincardine was a level swamp of about four miles long and two broad ; the moss was seven feet in depth upon a bottom of clay, and lay between the rivers Forth and Teith. In 1766, Lord Kames came into possession of the Blair-Drummond estate, to which this moss belonged, and he resolved if possible to improve it. His plan was to wash away the entire moss into the Forth, and to effect this the water of the Teith was used ; accordingly, the stream was turned in upon the moss and men employed to cut the stuff for the current to carry away. But the process was rather slow, and when his lordship died in 1783, a thousand acres still remained, which his son, Mr. Home Drummond, determined to remove by a more rapid process. He consulted several engineers, and Mr. Whitworth recommended a plan ; but George Meikle, a millwright at Alloa, the son of Andrew, proposed another, the invention of his father ; and Whitworth at once acknowledged its superiority to his own, and urged Mr. Drummond to adopt it. "The invention consisted of a newly-contrived wheel, twenty-eight feet in diameter and ten feet broad, for raising water in a simple, economical, and powerful manner, at the rate of from forty to sixty hogsheads a minute ; and it was necessary so to raise it about seventeen feet, in order to reach the higher parts of the land. The machinery on being erected was set to work, and with such good results that in the course of a very few years the four miles of barren moss were completely washed away, and the district was shortly after covered with thriving farmsteads, as it remains to this day."[2]

Other requisite agricultural implements were gradually improved and adopted. In the department of ploughs and other implements used in land tillage, the Sellars of Huntly, in Aberdeenshire, were among the first in Scotland who made and introduced an effective and superior class of such implements, which have contributed much to the improvement of the tillage of the soil in the present century. The ploughs of this firm (the drill-plough) effected a saving of labour, and their single-furrow ploughs when worked by capable men produced a quality of work as yet unsurpassed in any quarter of the globe.

In the present century all kinds of agricultural implements have

[2] Tytler's *Life of Lord Kames*, Vol. II., pp. 27-30 ; Smiles' *Lives of the Engineers*, Vol. II., pp. 115-116. Andrew Meikle was the first master who trained John Rennie, the well-known Scotch engineer.

been brought to great perfection ; and within my own recollection a revolution has been effected in agricultural machines. The water and horse-power thrashing-mills were a great improvement, and in the early part of this century a vast number of them were erected throughout the north and west of Scotland. Now there are not only stationary thrashing-mills driven by steam, but also locomotive steam thrashing-machines which can travel from end to end of the country, and operate wherever they are required. While, instead of sowing grain and other seeds with the hand, there are now various kinds of sowing-machines ; and instead of cutting with the hand-hook or scythe as of old, there are cutting-machines and reaping-machines in endless variety. Instead of the wooden plough, with its point of iron, which only scratched the soil, although it was drawn by twelve oxen, there are many kinds of iron ploughs drawn by horses, and also steam ploughs. Such contrasts show the advance which has been attained.

The enclosing of waste lands for pasture was begun in the district of Galloway about 1720, by the cattle-dealers, who bought and pastured live stock which they drove to the English markets. In course of time their example was followed by some of the landholders in different parts of the country. The Earl of Haddington, Cockburn of Ormiston in East Lothian, the Earls of Stair and Eglinton in Ayrshire, and others became improvers of husbandry upon their estates. In 1733, they formed the plan of a Society for the Encouragement of Agriculture, and in a short time three hundred of the principal landowners in Scotland joined it. This society continued in vigour for twenty years, and contributed to diffuse a spirit of improvement over a considerable part of the country.[3] It is re-

[3] "Infinite good was done by this society to their country, particularly by receiving memorials, and answering queries, concerning husbandry and manufactures ; by their proposals relative to the public funds, drawn up by a committee of their number ; by their application to the royal burghs for their concurrence ; by their joint application to parliament ; by the acts in consequence of that application, and by the king's patent following thereon, naming trustees for the fisheries and manufactures, almost all chosen out of this society. Before this society commenced, we seemed to have been several centuries behind our neighbours in England ; now, I hope we are within less than one of what they are, either with regard to husbandry or manufactures." Maxwell's *Practical Husbandry ;* Edinburgh, 1757. The appointment of the Board of Trustees for the Encouragement of the Fisheries, Arts and Manufactures, spoken of in the quotation, arose from the Treaty of Union. In the 15th article it was stipulated that a sum of money, termed the equivalent, should be paid by England, and applied to public purposes in Scotland ; thus the duties of the Board were to administer this fund.

ported that Cockburn was among the first landlords in Scotland who granted nineteen years' leases to their tenants.

At this time, however, a large part of the land in the best parts of the country was occupied by a number of small holders who shared the ground among them by alternate ridges; this custom of run-ridge possession was inconsistent with good farming, and retarded improvement. As clearer and wiser ideas of agriculture were gradually formed, this system decayed and died out, excepting in some remote parts of the Highlands, where it was practised till recently.

After the battle of Culloden, the forfeited estates were placed under the management of a Board of Commissioners, of whom Lord Kames was one; and his duty as a member of this Board gave him an opportunity of considering plans for the improvement of those large domains, of which they had the charge for the public benefit. The first step was to obtain a correct report of the actual position of those estates, the soils of the different farms, the modes of culture in use, the crops usually raised, the manures used, the prices of labour and provisions, and, in general, every kind of information which might tend to suggest the best modes of improving the lands. Mr. Andrew Wight of Ormiston, an active and intelligent man, was proposed by Lord Kames, and appointed by the Board to proceed under a set of instructions and make a survey. His reports were issued in 1773 and 1774, and they were deemed so satisfactory that the Commissioners adopted from them a number of wise regulations for the management of those estates, and carried out the most effective improvements of the lands.[4] With the view of extending those advantages to the whole country, they engaged Wight to continue his surveys and to draw up similar reports of the actual state of agriculture in every quarter of Scotland. The result was, the collection of a vast body of useful information, which was printed in six volumes, from 1778 to 1784, and contributed much to raise the spirit of improvement, which from this date has been continually progressive —insomuch that before the end of the century the state of agriculture in the Lowlands was completely changed, and the face of the country had assumed a new aspect.

But in the Highlands and Islands the changes which were effected with regard to the relation of the people to the land, in the latter part of the last century and the early part of this one, were of a

[4] This Board was of course superseded when the forfeited estates were restored in 1784.

questionable and less beneficial character ; but I have elsewhere discussed this part of the subject, and deem it unnecessary to enlarge on it here.[5]

The Society for the Encouragement of Agriculture in Scotland, formed in 1733, referred to in a preceding page, was the first Society of the kind in Britain. The Highland and Agricultural Society of Scotland was instituted in 1784, and established by Royal Charter in 1887. It has thus had a continuous life of one hundred and twelve years ; and has directed attention to the important matters of breeding cattle and horses, and stimulated the improvement of agriculture in many ways.[6] In the present century, agricultural societies and associations have been formed in every county and district in Scotland, and have attained a high stage of development. Their chief object is the improvement of live stock of every description, and also the improvement of all kinds of cereals which may be advantageously cultivated on farms, and all kinds of vegetables useful and profitable for animal and human food. That these societies have done incalculable good, and contributed greatly to the progress of civilisation in Scotland, cannot be questioned ; because they have been instrumental in improving the quality and increasing the quantity of the prime necessaries of existence.

In the present century one of the most remarkable changes in agriculture has been the extension of the cultivation of turnips. Prior to this century they were but little cultivated in Scotland : but when the modern method of feeding cattle for sale in the great centres of population began to be developed, it became necessary to put a larger portion of the cultivated land of the country annually under this crop. In the north-eastern counties of Scotland the most common modes of rotation of crops on farms are these :—(1) The farm is divided into five shifts or divisions, one of which is under turnips, excepting a small proportion of it usually under potatoes ; (2) two out of the five divisions are under grain crops ; and (3) the remaining two are under grass. Under this mode of farming there is always nearly one-fifth of the entire extent of the farm under turnips. Again : (1) The farm is divided into seven shifts, one of which is under turnips, excepting the small fraction under potatoes ; (2) three

[5] *Celtic Magazine* for January, 1887.

[6] The history of this society has been admirably written by Dr. Ramsay, the editor of the *Banffshire Journal*, in a work which was published in 1879.

out of the seven equal divisions of the farm are under grain crops; and (3) the remaining three are under grass. Under this mode of rotation a seventh part of the farm is always under turnips. I have seen farms worked under six shifts, but this mode is not common in Scotland. The common grain crops are oats, barley and wheat.

Breeding, rearing, and feeding cattle have attained a high degree of development within the present century in Scotland. As a consequence of this the rent of cultivated land has also risen greatly; and I may repeat what I stated elsewhere not ten years ago:—"The sharpest period of competition in farm-letting was during the second and third quarters of the present century. From about 1830 to 1876 the rent of agricultural land in Scotland rose at least from 30 to 40 per cent., and there were several causes which enabled farmers for a time to pay this rise of rents:—(1) There was a marked change and improvement in the modes of culture; (2) there was a notable change in the system of feeding cattle, and an immense increase in the number of cattle thus fed; (3) greater attention and care were paid to the important matter of breeding; (4) there was an almost continuous rise in the price of fat cattle during this period. Thus it was, and especially owing to the latter cause, that farmers were able to pay such high rents.

"This period was also one of great commercial activity and prosperity, unapproached before in the annals of Scotland. But this brought outsiders into the number of those competing for farms; as many men who had made fortunes in trade and commerce desired to have farms, and offered high rents—often more than they were worth. This for a time tended to raise rents still higher. But eighteen years ago it became manifest that the rents of land in Scotland were too high, for the price of fat cattle had fallen about 15s. per cwt., which represents a sum of from £6 to £7 per head on ordinary fat cattle. This fall in the price of fat cattle is mainly owing to two causes:—(1) To the long-continued depression of trade throughout the civilised world; (2) to the importation of preserved meat and live stock, chiefly from America. Thus it has happened that at the present time many of the farmers in Scotland cannot continue to pay the rents which they may have contracted to do before the fall in the price of fat cattle."

Thus far I have indicated the improvement and progress of agriculture in Scotland, and pointed out its prime and fundamental importance in relation to the advancement of civilisation. I have also

indicated the real state of the question of land rents as it at present stands in Scotland.

In conclusion, it may be remarked that in the early part of the eighteenth century the common wage of day labourers was fivepence a day in winter and sixpence in summer. And within my own recollection, the most capable farm-servant acting as foreman only received six pounds of wages for the half year, and second and third class men five and four pounds, youths from two to three pounds, and boys from one pound to two pounds according to their strength and appearance. In regard to the quality of food there was not much difference between the eighteenth and nineteenth centuries, so far as farm-servants were concerned.

In the present century horticulture began to receive more attention, and within the last sixty years it has attained a considerable development. Horticultural societies began to be formed in the first quarter of the century, and such societies now exist all over the country, and form a source of enjoyment to a large number of people.

CHAPTER XLVIII.

Progress of Mining, Manufactures, and Commerce, in the Eighteenth and Nineteenth Centuries.

SECTION I.

Coal, Iron, and Lead Mining.

IN the Introduction, it was stated that the country was rich in the raw materials of industry ;[1] and in the preceding volumes an account was given of the various attempts at mining, and the introduction of manufactures, to the end of the seventeenth century. In this chapter an effort has been made to present a clear and concise account of the development of mining operations, the manufacture of iron, the development of the means of communication and commerce, and, finally, of all the chief branches of manufactures.

The carboniferous system of Scotland has been fully treated by geologists, and its peculiarities and extent have been often described. Although broken strata of coal have been found in the Western Islands and Sutherlandshire, the great coal-bearing strata of Scotland extends from Fife Ness across the country in the line of the valleys of the Forth and Clyde. The superficial area of the coal-fields of this region is calculated to be about 1600 square miles.

The carboniferous or coal-bearing system occurs immediately above the old red sandstone, and it consists of a series of formations, which are usually classed in four groups thus :—(1) The upper strata, commonly called "the true coal-measures"—a thick series of sandstones, shales, fireclays, some impure limestones, ironstones, and numerous coal seams ; (2) Millstone grit—generally a local formation of moderate thickness, consisting of gritty sandstones, with inter-stratified shales and thin seams of coal ; (3) Mountain or carboniferous limestone—a series of thick-bedded marine limestones, with some shales, sandstones, and thin seams of coal ; (4) Lower coal measures—a great thickness of fine sandstone and grits, with shales, fireclays, ironstone,

[1] Mackintosh's *History of Civilisation in Scotland*, Vol. I, p. 29.

shell and fresh-water limestones, and thinnish seams of coal. Thus coal and ironstone occur in the same group of strata.

The coal seams and beds occur in all degrees of breadth and thickness. At Johnstone, in Renfrewshire, there was a seam of 100 feet in thickness, but it is exceptional; while the thickest seam in the Lothians is only 13 feet.[2] The centre of the coal-fields is Clydesdale, where about one-half of the Scotch collieries are placed; they extend through or touch upon thirteen counties, and of these Lanarkshire has the greatest number, and Ayrshire, Fifeshire, Stirlingshire, Edinburghshire, and Linlithgowshire follow in order. In most of these counties, more or less valuable beds of ironstone, shale, and limeston eare intermixed with the coal.

In the early part of the eighteenth century the coal-mining operations in Scotland were on a very small scale; but considerable progress was made before the end of the century. When the shallower parts of the coal-fields were exhausted, it became necessary to form the sinking shafts. The early mode of mining was simply to drive into the coal-seams tunnels; but only a small extent of the seams could be worked in that way, when the tunnels became dangerous by the accumulation of foul air. Where the seams dipped downwards, water accumulated, and much labour was required to keep the workings clear.

After the method of working the coal by shafts descending to the seams was adopted, contrivances for raising the coal and keeping the pits clear of water were introduced. In some pits the coal and water both were drawn up by a winch worked by men; in others, chain and bucket engines were employed for hoisting the water out of the pit. In 1762 a steam-engine was used for the first time at a coal pit in Scotland. Few of the pits of those days exceeded a depth of twenty or thirty fathoms, and with such appliances as were then available the difficulty of working them was great.[3]

From this date to the end of the century the coal trade increased slowly but steadily; and, as steam-power began to be more and more applied to manufactures, the consumption of coal increased. When steam-ships and railways were introduced a much greater demand for

[2] Coal is found in layers or seams varying from one inch up to thirty or forty feet in thickness, but seven or eight feet is the maximum thickness of single seams; miners consider one which measures five feet as a thick bed, and seams of one foot or under are not deemed worth working.

[3] *Industries of Scotland*, by D. Bremner, p. 4; 1869.

coal arose. But there were some unpleasant and unsatisfactory conditions connected with the working of the coal mines which cannot be passed over unnoticed.

In a preceding volume the state of the workmen in mines and at salt-works was explained;[4] in short, they were in a state of semi-slavery until 1775, when they were emancipated by an act of parliament. So it could not be expected that men kept in this condition for centuries would at once assume the spirit and characteristics of those who had been long accustomed to the exercise of liberty and freedom. In the year 1842, it was found that children and women were employed in the coal mines of Scotland, as well as in those of England. An act of parliament was then passed prohibiting the employment of children and women in coal pits; but neither this act nor subsequent ones were altogether effective for a long time. There were, however, a number of Scotch pits in which women and children had never been employed; and at present the mines are placed under a regular system of inspection.

All the collieries in Scotland are now worked by steam-power; and various attempts have been made to apply this power to machinery for excavating the coal. Seams of coal are now worked at a much greater depth than they could have been before steam-power was introduced. The Nitshill Pit in Renfrewshire is 175 fathoms in depth—one of the deepest in Scotland.

In 1866, the quantity of coal raised in Scotland was 12,034,638 tons; and the same year, the declared value of the coal exported from Scotland was £515,805: the quantity of coal, cinders, and culm represented by this would amount to about 1,500,000 tons. Since this date the annual produce has greatly increased. In 1875 the minerals raised in the Scotch coal-fields amounted to a total of 21,778,480 tons, consisting of coal, ironstone, limestone, and oil-shale.

In 1871, there were 47,620 persons employed in coal mining in Scotland; and of this number, 14,497 were under twenty years of age; and out of the total there were 355 females engaged in this work, of whom 184 were under twenty years of age. The hands were distributed in the centres of the mining industry thus:—In Lanarkshire, 23,658; in Ayrshire, 8208; in Fifeshire, 4646; in Stirlingshire, 3822; in Edinburghshire, 3399; in Linlithgowshire, 1721; and the remaining number were distributed among the

[4] Mackintosh's *History of Civilisation in Scotland*, Vol. III., p. 291.

counties of Haddington, Clackmannan, Dumbarton, Renfrew, and Dumfries. In 1891 the coal miners were distributed thus:—In Lanarkshire, 38,000; in Ayrshire, 10,910; in Fifeshire, 8,352; Stirlingshire, 5,230; Edinburghshire, 4,113; Linlithgowshire, 3,213; and the remainder in the other counties above indicated.

In 1875, in these districts there were upwards of 76,000 persons employed in raising coal, ironstone, and lime. In 1891 the number of coal, ironstone, and shale miners was 82,701. The pits through which the minerals are raised vary from 30 to 180 fathoms in depth, and as a rule are not heavily watered.

Touching the wages and the social condition of the coal miners much might be said, but space is limited, and brevity must be observed. In no occupation has there been a greater fluctuation of wages in the present century than in that of the coal miner. In Lanarkshire, in 1836, the daily wage was 5s.; the next year a reduction was made to 4s.; and a strike ensued which lasted four months, and then the men returned to work at the terms offered. Wages gradually declined, and in 1842 they were as low as 2s. 6d. and 1s. 8d. a day. Their union was then renewed, and they went out on strike; and this time the masters yielded and granted an advance of 1s.; but it was soon after reduced again. In 1847, there was a great strike, when the men stood out for 5s. a day; they, however, recommenced work at 3s. a day, which in a few weeks after was reduced to 2s. a day. In 1851, the average wage of miners was 2s. 6d. a day; but in 1852, the Scottish Miners' Association was formed, "for the protection of miners' rights and privileges." In 1854, the daily wage was 5s.; but a gradual fall followed, and in 1858 the average wage was 3s.[5] From this date onwards for about fifteen years the coal miners' wages in Scotland continued to rise till they reached the figures of 8s., 10s., and even 12s. a day; then they fell greatly. In 1887 their wages was only 2s. 6d. a day: a rate which was too low for their class of labour, or for any body of regularly working men. Since then their wages have fluctuated. There has been several strikes, and an extremely disastrous one in 1894.

The sons of miners generally follow the occupation of their fathers, and begin to work at twelve years of age, when he enters the pit and "is attached to his father or some other man, and becomes known as

[5] *Notices of some of the Principal Manufactures of the West of Scotland*, p. 14; 1878.

a 'quarter-man.' The miner with whom he works is entitled to put out one-fourth more coal than if he worked without assistance, and from the price received for the extra quantity he pays the boy, whose duty it is to fill the coal into the 'tubs' and convey it to the pit bottom. At fourteen, the boy becomes a 'half-man;' at sixteen, a 'three-quarter-man;' and at eighteen, he assumes the title of 'miner,' performs a man's work, and draws a man's pay." [6]

As a class, the coal-miners of Scotland have had upon the whole a hard lot, and their present condition is not a comfortable or happy one. Although in recent years their houses have been rebuilt, which in early days were wretched huts, still many of their dwellings are far from comfortable. They are small: their dimension is usually twelve feet by fifteen; but of course there are exceptions at some of the collieries. At the Dalkeith Colliery, which belongs to the Duke of Buccleuch, the miners' houses are well constructed and commodious, with spaces of ground attached to them for drying clothes or as playground for the children.

It has to be understood that those engaged as iron-miners all work within the district of the coal fields; in fact, the ironstone miners' work differs but little from that of the coal-miner. Although it was known that ironstone existed in the Scotch coal measures before the eighteenth century, little was done in the way of mining or manufacturing iron in Scotland before that century, and it was only towards the end of it that the manufacture assumed much importance.

At first there were only a few persons employed in mining for iron, and in the last century the number of iron-miners were not numerous. But the great development of the iron trade in the present century increased the number of miners of every description. In 1871, the number of persons employed in mining for metals was 14,201, and of this number 3830 were under twenty years of age, and among them there were 20 female miners. The number directly engaged in mining for iron was 9087.

In the preceding volumes it was noticed that lead ore exists in Scotland, and has been worked in many parts of the country, but only in a few cases has it proved remunerative. At present, four or five mines are worked, and the total produce is about 1500 tons of pure lead per annum. The chief mines are at Leadhills in Lanarkshire, about fifty miles from Glasgow, and Wanlockhead in Dumfriesshire.

[6] *Industries of Scotland*, by D. Bremner, p. 22.

The veins of ore in these mines have been worked to a depth of from 70 to 140 fathoms. In 1861, there were 538 lead-miners in Scotland; and in 1871, there were 600 employed, and of this number six were females. In 1891 the number had fallen to 432.

Traces of copper ore have been found in many places in Scotland, and from early times attempts have been made to work the veins, but only in a very few cases with success. In 1861, there were forty-one copper miners in Scotland; in 1871, there were thirty-six, one of whom was a female. In 1891, there were only thirteen. In 1871, the number of persons employed in connection with mining for minerals and metals—as mineral borers, sinkers, and mine service, was 4000.

Section II.

Iron Works and Iron Manufactures.

Iron is one of the staple manufactures of Scotland, and the development which it has attained since the middle of the last century is surprising and wonderful. The Scottish ores are known by the names of the clayband ironstone and the blackband ironstone; the former only was known and used in the eighteenth century, the latter was not even discovered till about the beginning of the present century. But for many years the Scotch ironmasters have imported considerable quantities of hæmatite iron ores from England, ochrey iron ores from Spain, magnetic iron ores, and spathic ores, from various countries, which were used in the Scotch blast-furnaces. Thus the quality of Scottish iron has not been dependant on the native ores. From an early period small quantities of iron were smelted by a rude process.

A furnace was built at Goatfield in Argyleshire, about 1750; and about the same time another was erected at Bonawe, also in Argyleshire, for making charcoal iron from hæmatite ores. The Bonawe furnace continued and was subsequently known as the Lorne furnace, and carried on by Messrs. Harrison, Ainslie and Co. The hæmatite ore used in this furnace was taken from Cumberland, and the charcoal was produced at the works in the woods in the neighbourhood. In 1788, the produce of these two furnaces was 1400 tons of iron per annum. The Bonawe furnace, in 1875, was only producing 800 tons a year, which is accounted for from its being so far removed from the centre of iron ore and coal.

In 1760, the Carron Ironworks were erected by a company, consisting of Dr. John Roebuck, a native of Sheffield, William Cadell of Cockenzie, Samuel Garbet of Prestonpans, and others. They were assisted in some important contrivances connected with the work by Smeaton, the eminent engineer. The first furnace was blown on the 1st of January, and from that memorable day onward the works have had a remarkably successful career.

These works in a few years became amongst the most famous in Europe; and the products of the firm long held a high reputation in the leading markets of the world. Sir John Sinclair in his *Statistical Account of Scotland*, published in 1792, describes the Carron Works thus :—

"There are five blast furnaces, sixteen air-furnaces, a clay mill for grinding clay and making fire-bricks for the use of the said furnaces, an engine that raises four tons and a half of water at one stroke, and on an average draws seven strokes per minute. This engine goes in time of drought, and consumes sixteen tons of coal in twenty-four hours. Besides the coals consumed by the engine, there are a hundred and twenty tons burned every day in the works and by the inhabitants belonging to them. Besides the air-furnaces there are three cupola furnaces that go by virtue of the blast-furnaces, by pipes conveyed from the machinery of the blasts; their business is much the same with the air-furnaces. There are also four boring-mills for boring guns, pipes, cylinders, etc. One of the boring-mills is adapted for turning the guns on the outside. They have likewise Smith's forges for making the largest anchors and anvils, as well as small work of various kinds, besides a forge for making malleable iron, and a plating forge; also a forge for stamping iron, the hammer of which, with the helve, are both of cast metal, and weigh a ton and a half."

Thus it appears that, though Carron obtained its reputation chiefly for its pig-iron manufacture and castings, it was also the first place in Scotland where malleable iron was made. There are about two thousand men and boys employed at the works. A farm of four hundred acres is attached to the works, and there are five villages in the neighbourhood, dependencies of the company, in which many of the houses have been built by them.[7]

[7] *Notices of some of the Principal Manufactures of the West of Scotland*, pp. 31-32, 1876. From Burns to the present day there is a concurrence of testimony to the effect that it was next to impossible for any stranger to get a look

From the establishment of these works till 1788, the quantity of iron produced in Scotland was about 1500 tons per annum, but before the end of the century a number of other iron works were erected. Shortly after 1770, the Cramond Works were started with two furnaces, which were each 40 feet high and 14 in diameter. Between 1779 and 1796 there were furnaces erected at Glenbuck, Muirkirk, Wilsontown, Calder, Clyde, and Omoa, in Lanarkshire. The Clyde Works were begun in 1786 ; there were two furnaces in blast in 1792, and in 1799 there were three. At that time nearly the whole produce of the works was cast into cannon and artillery equipments. In 1796 there were seventeen blast-furnaces in Scotland, and the quantity of pig-iron produced in that year was 18,640 tons.

The first of the important group of blast-furnaces in the neighbourhood of Coatbridge and Airdrie was commenced in 1800. Shortly after, David Mushet discovered the blackband ironstone in this locality. While he was crossing the river Calder, at a spot a little above Cairnhill Old Mill, he first observed the blackband in an outcrop. When he ascertained that it belonged to the upper coal measures he continued his investigation, and soon found other beds of the blackband ironstone in the lands of Clifton Hill, Airdrie, Burnfoot, Kipsbyre, Rochsoles, Woodhall, and Lauchope. Since his discovery, this iron ore has been found in other parts of the carboniferous system, and its existence has contributed greatly to the progress of the Scotch iron trade.

"The blackband ironstone contains from 50 to 70 per cent. of iron in combination with sufficient carbonaceous matter to calcine it when put into heaps."[8] Good blackband iron ore contains from 2 to 8 per cent. of coal ; if it contains more than 20 per cent. of coal, it is of little value save when mixed with clayband, which uses up the excess of coal.

After the discovery of the blackband ore, the iron trade advanced more rapidly in Scotland. The most of this ore is embedded in Lanarkshire and Ayrshire, and they became the chief centres of

through the Carron Works. Mr. Smiles wished to see a long-disused apparatus which Smeaton, the engineer, had contrived, but in the autumn of 1858, when he called at the works for that purpose, and requested admittance, the reply of the manager was, "Na, na, it canna be allood. We canna be fashed wi' strangers here."—*Lives of the Engineers*, Vol. II., p. 61.

[8] *Notices of some of the Principal Manufactures of the West of Scotland*, p. 37.

the iron manufacture. The quantity of iron produced in 1806 was 20,240 tons; in 1825 it was 24,000 tons; and in 1829 it had reached 29,000. But the introduction of railways now began to cause a greater demand for iron, and this, with the rapidly increasing consumption of iron in supplying the machinery and apparatuses of the many manufactories which were springing up throughout the country, gave an enormous stimulation to the iron trade. Accordingly new ironworks and many furnaces were erected in Scotland between the years 1825 and 1850. In 1827, J. B. Neilson, engineer of the Glasgow Gasworks, formed the idea of heating the air before injecting it into the furnace; and in 1829 his invention was tried at the Clyde Ironworks with marked success.[9] This invention gave a great impetus to the iron trade; and the patentee and his partners were reported to have realised £300,000 from it. Powerful engines are used for generating the blast.

An idea may be formed of the activity of the iron trade and its rapid progress in Scotland from a comparison of the annual production of iron at different periods. As stated above, the production in 1829 was 29,000 tons; but for the year 1835 it had risen to 75,000; in 1840 it was 197,000 tons; in 1845 it reached to 475,000 tons; in 1850 it was 690,000 tons; in 1855 it was 820,000 tons; in 1861 it rose to 1,050,000; in 1865 it was 1,164,000 tons; the following year the production fell to 994,000; but it rose again, and in 1870 it was 1,206,000. Thus the production of iron in Scotland had increased in forty years more than a million of tons. But this rapid development of the iron trade was not peculiar to Scotland; there was also a remarkable increase in the production of iron in England and in other countries springing from similar causes.

The Gartsherrie Ironworks, in the vicinity of Coatbridge, which were started by Alexander Baird in 1830, with one blast furnace are now the largest in Scotland. These works were developed with remarkable enterprise and skill. In 1875, the works consisted of sixteen furnaces, placed in two parallel rows, one on each side of the Monkland Canal; these furnaces are all open-topped, and, having been built at different dates, they are of various patterns and sizes. The works produce 100,000 tons of pig iron per annum, and upwards of 3000 men and boys are employed in connection with the works. In the neighbourhood of the works there are some 500 houses

[9] *Industries of Scotland*, by D. Bremmer.

belonging to the Messrs. Baird & Co., which are occupied by their workmen.

In 1875 this firm had other four ironworks in Ayrshire; in all they had forty furnaces, which produced 300,000 tons of pig-iron per annum, and gave employment to about 9000 men and boys.

The Summerlee Ironworks, which were started in 1836, are near by Gartsherrie Works. In 1875 these works had eight furnaces, from which a portion of the gas is taken off and used for generating steam for driving the blowing engines and heating the blast, and three of the furnaces had been raised to a height of 70 feet; the others varied from 42 feet upward. The annual produce of Summerlee Works when the furnaces were all in blast was from 50,000 to 70,000 tons of pig-iron. The Langloan Ironworks, belonging to Messrs. Addie & Sons, are situated in the same locality, and consist of eight furnaces, which are chiefly employed in making foundry iron. In 1875, the Calder Ironworks, which commenced in 1800, where blackband ironstone was first used, consisted of eight furnaces. The Coltness Ironworks were begun in 1837, and in 1875 they consisted of twelve furnaces placed in two parallel rows. Each of these furnaces produce from 12 to 15 tons at a cast, and are tapped every twelve hours.[10]

In 1867 the number of furnaces in Scotland was 164, but they were not all in blast. On an average each furnace produced about 9546 tons per annum, and each gives employment, directly and indirectly, to 200 men and boys. Thus, if the furnaces were all in blast, the annual production of iron would exceed 1,500,000 tons, and give employment to upwards of 33,000 men and boys.

During the early stages of iron manufacture in Scotland there was not much malleable iron produced. But between the years 1828 and 1836 this branch was successfully established, and it has since been carried on with surprising energy and skill. In 1875, there were upwards of 400 puddling furnaces, many scrap and heating furnaces, and 50 rolling-mills. The average annual produce of malleable iron was about 145,000 tons, representing a value of over a million sterling.

These works produce plates, bars, and all kinds of manufactured iron; and some of them are very large establishments. The Glasgow Iron Company have the largest ironworks of this class in Scotland,

[10] *Notices of some of the Principal Manufactures of the West of Scotland,* pp. 39-43.

at St. Rollox and Motherwell, which were established in 1845. In 1875, these works had 102 puddling furnaces, and fourteen rolling-mills; and were fully equipped for turning out from 300 to 400 tons of finished iron per week, consisting of ship and boiler plates, angle iron, tee iron, and other kinds. The works of the firm were also equipped for producing from 600 to 800 tons per week of sheets, rails, nail-rods, hoops, and all kinds of small merchant iron.

There are many other great ironworks in and around Glasgow, but space is limited, and I can only notice a few. The Parkhead Ironworks, belonging to the Messrs. Beardmore, is a very large and remarkable establishment. In 1875, the works had forty puddling furnaces, a corresponding number of rolling-mills, fourteen steam hammers with heads varying in weight from seven tons downwards, and many other well-designed appliances of a heavy type. There were 600 hands employed in the works, and they can turn out 1000 tons of plates, and 150 tons of forgings of all descriptions, per month. It was in this work that the double crank-shaft of the *Monarch* (a huge warship) was forged, which weighed, when it left the hammers, 32 tons.

The Lancefield Malleable Ironworks stand on the south side of Glasgow, in Scotland Street, and its productions are of a similar nature to those of the Parkhead works. The Lancefield establishment is famed for its great forgings of the class of crank shafts, propeller shafts, stern posts, and so on. "When it was required to produce the forgings for the *Great Eastern*, there was only one forge in the whole world ready and prepared to execute the task. That forge was Lancefield. The propeller-shaft of the *Great Eastern* was 47 feet long, and weighed 35 tons, the crank-shaft 31 tons, and the stern-frame 25 tons." In short, it was once said:—"When a shipbuilder requires a stern-frame for an iron vessel of 5000 or 6000 tons burden . . . there are in all Europe only the government establishment of Russia, the forge of Messrs. Marrell in France, one or two forges on the Thames and Mersey, and some three or four on the Clyde equal to the task."[11]

Steel has not been extensively manufactured in Scotland; and, in 1875, it was mostly limited to one company, which commenced in 1871, under the name of the "Steel Company of Scotland." This firm then employed 700 men, and produced from 2000 to 2600 tons

[11] *Notices of some of the Principal Manufactures in the West of Scotland*, pp. 51-53.

per month, consisting chiefly of rails, forgings, and plates. This, with the exception of a small quantity of crucible steel, embraced all the production of steel in Scotland. Since there has been a large increase in the production of steel, mainly caused by the substitution of steel for iron in shipbuilding. Lanarkshire is the centre of the steel manufacture in Scotland. In 1891 there were 4,393 men employed in this manufacture.

There are a number of branches connected with iron :—(1) *Iron-founding*, often carried on in connection with special branches of trade pursued by some engineering firms; and sometimes engineering establishments are called foundries, though they have discontinued iron-founding. But the general tendency for long has been to draw the lines of the division of labour within more specialised limits; and ironfounding now embraces several pretty well defined branches. In the Glasgow district there are a number of foundries which limit their attention to the production of iron castings alone; and in other places—Dundee, Aberdeen, and other towns—such works have long been in operation. The work produced in such foundries comprises sugar-pans and batteries, round pans and coolers, vacuum pans and connections, kokers, round and square tanks, bleaching boilers, soap pans and boilers, chemical pans and retorts, castings for marine and land engines, for sugar mills, gearing, hydraulic presses, etc. (2) Domestic, sanitary, and architectural castings, gas and water castings; (3) the pipe-founding trade; (4) apparatus for gasworks; (5) the iron tube manufacture; (6) rivet, bolt, and nut trade; (7) screening apparatus; (8) the machine tool trade; (9) boiler making, rivetting machines, etc.; (10) iron piers, bridges, and roofing, etc.; (11) railway plant; (12) locomotive engine trade; (13) colliery machinery; (14) blowing engines, and pumping machinery; (15) agricultural implements and machinery; (16) wood-working machinery; (17) sugar-making machinery; (18) textile machinery; (19) the sewing machine trade; (20) distilling apparatus; (21) cranes and other hoisting apparatus; (22) traction engines, and many other mechanical appliances. All these branches of manufactures are carried on in and around Glasgow to a greater or less extent, and many of them also in the other centres of industry throughout the kingdom.

Having indicated the progress of the coal and mining industries, which may be considered as the foundation stones of the whole circle of manufactures; and the progress of the iron manufacture, which may be conceived as the dressed materials, the indispensable links in

the development of all the other great manufactures. But, before proceeding to give a brief account of the evolution of the other manufactures, the order of events, and the relation of causes and effects renders it requisite to treat of the means of communication, for in a preceding volume it was stated that—"Means of intercourse, as roads, bridges, communication by sea, and postal arrangements, are closely connected with trade and national progress. Roads, in the order of development, naturally precede the other modes of transit, and are followed by ferry-boats, canals, improved harbours, and a regular postal system. As civilisation advances, these are rapidly improved, and by-and-by partly superseded by better expedients and arrangements, as steamships, railways, telegraphic and telephonic communication, all which evince the resources of the human mind.[12] Therefore, let us proceed to indicate the progress which has taken place in the means of communication during the past century and a half.

Section III.

Improvement of the Means of Communication.

In the early part of the eighteenth century, the roads in Scotland were very bad, but there was then little traffic, and few wheeled vehicles of any kind were used. The roads constructed by the Government in the Highlands were of little commercial importance, as they were planned for military ends. This part of the country was not opened by good traffic roads till the beginning of the present century. The spirit of improvement, however, had begun in the Lowlands a century earlier, although it made little progress in road-making for a considerable time.

In 1776, an authoritative Survey of the roads of Scotland was published.[13] In this Survey, the great roads throughout the country are measured from Edinburgh, and it gives a list of the different stages, and shows the distance between one stage and another, as well as the distance of each stage from Edinburgh; all the cities, towns, and villages on the lines of these leading roads are marked,

[12] Mackintosh's *History of Civilisation in Scotland*, Vol. III., p. 294.

[13] Tylor and Skinner's *Survey and Maps of the Roads of North Britain or Scotland.*

and the bridges and cross-roads indicated. It is pretty evident that at this time considerable progress has been made, and the statement in the Survey concludes thus :—"It may be expected that we should give a particular description of the roads, but this would be too great a departure from our original plan for us to undertake; we shall, therefore, only observe, that the military roads are kept in the best repair; and so much has been done of late years to the other roads, by the attention of the nobility and gentry, that travelling is thereby made incredibly easy, expeditious, and commodious; and such a spirit of improvement prevails throughout Scotland, that we may venture to say, a few years will complete all the public roads in that part of the United Kingdom.

"There are good inns on all the roads, with post-chaises and horses at every stage, as far north as Inverness by Aberdeen." About this time the general construction of turnpike roads began, and before the end of the eighteenth century the means of communication were greatly improved throughout the Lowlands. During this period the talents of Mr. Telford, the engineer, were much employed in planning and constructing roads and building bridges. His advice concerning the repairs of the road between Glasgow and Carlisle was sought. The roads to Glasgow, north of Carlisle, were in a very unsatisfactory state, and, in 1784, when the first mail-coach from London was driving into Glasgow by this route, the citizens formed a procession on horseback, and went out several miles to meet and welcome it.[14] A line of road was made from Carlisle, across the counties of Dumfries and Wigton, to Portpatrick, for the purpose of obtaining more rapid communication with Belfast and the northern parts of Ireland. Many roads and bridges were formed in the latter years of the eighteenth century and the early years of the present century.

In 1802, the Government employed Mr. Telford to make a survey of Scotland and report on the state of the roads and bridges, and on the means of promoting the fisheries on the east and west coasts, with the object of preventing further emigration of the inhabitants of those regions. He collected a vast mass of facts, and presented his report in April, 1803; and in the following summer, he received instruction to prepare for beginning practical operations. He proceeded to the Highlands to draw out the lines of roads and plan the bridges which were most necessary. His first aim was to secure the

[14] Smiles' *Lives of the Engineers*, Vol. II., p. 428.

connection of the new lines of road by bridges at the most important points, such as at Dunkeld over the Tay, and other points. The bridge at Dunkeld formed the opening, as it were, to the central Highlands, and it was finished and opened for traffic in 1809. The communication to the north of Inverness was continued by a bridge over the Beauly, and another over the Conan. He also erected three or four important bridges to connect the existing lines of road at Ballater over the Dee, at Alford over the Don, and at Craigellachie over the Spey. The bridge of Craigellachie was a light cast-iron arch of 150 feet, a beautiful structure. Telford, having thus connected the main lines of road, concentrated his attention upon the interior of the Highlands; and by the year 1820, one thousand two hundred new bridges were erected, and nine hundred and twenty miles of good roads were added to the road communications of this region. The first stage-coaches that ran northward from Perth to Inverness were tried in 1806; before 1811 they were regularly established, and in 1820 forty stage-coaches arrived in Inverness every week, and as many departed.[15]

Shortly after the Union the idea arose of uniting the east with the west, by a canal uniting the Forth and the Clyde. The scheme at first was thought to be impracticable; but when commerce had advanced a few degrees farther, it was readily adopted, and this important work was commenced in 1768. The canal runs nearly in the line of the old Roman wall, and it was opened in 1790. The main canal joins the Clyde a few miles below Glasgow. It is 38 miles in length; its medium width at the surface is 56 feet, and at the bottom 27; at first it was about eight feet in depth, but its banks were raised, and the depth of water then reached ten feet. It has thirty-nine locks, with a rise of 156 feet from the sea to the highest level.

In the latter half of the eighteenth century, many plans of canals were projected in Scotland, and surveys made, which were never executed. In 1807, a canal, intended to form a communication between Glasgow, Paisley, and Ardrossan, was begun; but only the part extending past Paisley on to Johnstone was made. It is about twelve miles long, thirty feet broad at the top and eighteen at the bottom, and four feet and a half in depth. The Union Canal, which joined the Forth and Clyde Canal near Falkirk, and thence to Edinburgh, a distance of thirty-one miles, was opened in 1822. In 1803, the construction of the Caledonian Canal was commenced, but it had

[15] Smiles' *Lives of the Engineers*, Vol. II., pp. 377-388.

been thought of long before. For in 1773, Watt, the improver of the steam engine, was employed to make a survey, and he announced that the canal was practicable, and pointed out how it could be constructed. It was made, at the expense of Government, from plans, and under the superintendence of, Telford, the engineer, and opened in 1822. Some other canals in Scotland, after being made and used for years, have been superseded by railways.

Thus far it appears that with regard to the means of internal communication both by land and water Scotland was fairly well advanced before the first quarter of the present century expired. But her manufactures and commerce were rapidly extending, and she was thus so far prepared to take advantage of any improved means of communication which might be discovered. The great revolution in the means of communication which took place in the second quarter of this century, however, does not seem to have been anticipated even by those who were most actively engaged in originating it.

A waggon-road, tramway, or railroad, is a kind of road with ways formed of wood, stone, iron, or other material, on which the wheels of vehicles or waggons passing along it run. The immediate end of all such roads is to enable a less quantity of power to impel a loaded carriage and send it forward at a greater speed. It is reported that wooden-rails were first employed about 1630, on roads used for coal-waggons in the north of England. It is recorded that, in 1745, a tramroad existed between the Tranent coal-pits and the harbour of Cockenzie in East Lothian. The first iron rails were cast at Colebrook Dale Ironworks, in Shropshire, in 1767. Rails were laid down at several of the collieries in Mid-Lothian, Lanark, and Ayr, long before locomotives were introduced. The first public railway in Scotland was constructed between Kilmarnock and Troon, nine and a half miles long, which was opened for traffic in 1812. The rails of this tramway were of cast iron and fixed in stone blocks, and the carriages were drawn by horses.

The earliest lines were mostly all connected with mines or quarries, and were worked by horses or by fixed engines. Before the year 1830 the sanction of Parliament had been obtained for the construction of upwards of a hundred miles of railways; and between 1830 and 1840, Parliamentary powers were obtained for two hundred miles of new lines of railways. The more important of these were the Edinburgh and Glasgow; the Glasgow, Paisley, and Greenock; the Dundee and Arbroath; Arbroath and Forfar. In the next ten

years there was a vast extension of railways, and many of the short lines were united into systems. But a number of the new railways then proposed were never made, though some of them were fifteen or twenty years afterwards, but not by the original projectors. For a time the country rang with projects of new and impracticable schemes of railways, and immense sums of money were lost and won; those were the days when millionaires began to arise in the iron trade, and in other less legitimate lines of business. Railway extension, however, continued till the whole country became penetrated with lines; and twenty-six years ago almost the whole of the railways in Scotland were either worked or leased by a few companies —The Caledonian, Glasgow and South-Western, North British, Great North of Scotland, and Highland—each of these companies have large systems of railway communication. In 1866, there were 2244 miles of railways in Scotland.

Along with the development of the railway system, a remarkable improvement and development of the postal system has taken place. The Post Office system is entirely under the control of the Government, and forms a distinct and important department of the administration. The introduction of the penny postage in 1840, and since then the introduction of post-cards, the telegraphic system, and the parcels post, were all important and convenient improvements.

Section IV.

Shipbuilding.

In the preceding volumes of this History the progress of shipbuilding from its origin in Scotland, in the form of a boat simply consisting of a single tree scooped out in the centre, has been traced to the end of the seventeenth century; in this section the vast changes and progress of the art since the beginning of the eighteenth century to the present time will be briefly indicated. In 1692, the number of vessels belonging to the chief Scotch ports was about 100, with a total tonnage of about 6000, which gives an average of 60 tons to each. But after the Union, a wider field was opened for the enterprise of the Scots, and the commerce of the nation extended amazingly. In 1760, the number of vessels had increased to 999, with a total tonnage of 53,913, giving an average of 54 tons to each. But in 1800, the number of ships had increased to 2415, with a

total tonnage of 171,728, giving an average of 71 tons to each, and employing 14,820 seamen. The number and size of vessels continued to increase, and, in 1840, there were 3479 ships with a total tonnage of 429,204, giving an average of over 123 tons to each, while the number of seamen employed was upwards of 28,000. In 1850, the number of sailing ships was 3432, with a tonnage of 491,395, being an average of 143 tons each ; and steamships 169, with a tonnage of 30,827 ; thus giving a total tonnage of 522,222. During the next ten years a marked change took place in the size of the ships, mainly owing to the improvement of harbours and docks, and the extension of foreign trade. The number of sailing ships in 1860, was 3172, being 260 fewer than 1850 ; but the tonnage had increased 60,817 ; so that in ten years the average tonnage of the sailing ships had risen from 143 to 175 ; the number of steamships had increased to 314, with a tonnage of 71,579, giving an average of 228 tons. In 1865, the number of sailing vessels of and under 50 tons was 1057, with a tonnage of 32,050 ; and above fifty tons 1925 vessels, with a tonnage of 600,195 ; the number of steam vessels of and under 50 tons was 119, and their tonnage 3080 ; above 50 tons 330, with a tonnage of 131,650.

Leith two centuries ago was the chief shipbuilding port in Scotland. After the Union, the *Fury*, a line-of-battle ship, was built at Leith. In 1840, two steamships were built, larger than any then afloat ; about the same time other large ships were built at Leith ; and it was even thought by many that this port would keep the lead in shipbuilding. It is needless to say that Leith has been left far behind in the race, and the centre of shipbuilding in Scotland has for many years been on the Clyde. The order of historic exposition seems to require that the other shipbuilding ports of Scotland should be noticed before this modern centre.

In Dundee shipbuilding was carried on from an early period. At the beginning of the present century a considerable number of vessels was built in Dundee for the coasting trade and the over-sea commerce. The size of the vessels continued to increase, and, in 1856, the Messrs. Alexander Stephen built a ship of 1848 tons burthen. There were then six firms engaged in building wooden ships, but, in 1870, there were only two exclusively employed in this branch. Steamship building was introduced at Dundee in 1823, when a paddle vessel was built for the traffic between Dundee and Perth, and it has since been carried on with great energy. Iron shipbuild-

ing was begun at Dundee in 1838, but there were not many iron vessels built at this port till after 1854. The first screw steamer was launched from the yard of Mr. John Brown in 1851. In 1854, the firm of Messrs. Gourlay Brothers began to build iron ships, and for many years they turned out a large number of steamers. Prior to 1865 all the vessels built in Dundee had been formed either of wood or iron, but in that year the Messrs. Stephen began to build ships with a combination of both materials; such vessels were known under the name of "composite," as consisting partly of iron and partly of wood.[16] In 1869 there were five shipbuilding firms in Dundee. In 1891 the number of hands employed in Dundee was 1,772.

A considerable number of vessels were built at Newburgh, Tayport, Arbroath, and Montrose.

Throughout the eighteenth century there was a growing shipbuilding trade at Aberdeen, and before the end of that period there were three or four firms carrying on this department. Early in the present century a class of larger vessels began to be constructed, and,

[16] "A number of years ago there was a great run upon what was designated 'composite' ships, that is to say, vessels having a skeleton, as it were, of iron, with a shell or cover of timber planking. They have had their day, and have already gone almost entirely out of vogue. If we go back to the year 1863, and note the statistics of the composite type of vessels, we find that there were launched two steamers and four sailing ships—only six in all. In the following year there was only one composite steamer launched, and there were six sailing ships of the same build, the total tonnage of the seven vessels being 5814 tons, none of them being over 1000 tons. In the year 1865, however, we find an extraordinary leap, one composite steamer and 19 composite sailing ships, of a total of 12,010 tons, being launched during that year. Of the same build there were three steamers and 12 sailing vessels launched in the year 1866, five steamers and 13 sailing vessels in 1867, followed in 1868 by six steamers (three of which were gunboats) and 18 sailing vessels, the total tonnage of the 26 sailing vessels being 17,713 tons. There was a sensible falling off in the composite tonnage launched in 1869, six steamers and 13 sailing ships, with a total of 14,395 tons. In the year 1870 no composite steamers were built and only six sailing ships of that build, of a total of 6100 tons; and no composite steamers have been launched during the last five years, and only two small composite sailing ships, and actually no composite shipping at all during 1873, 1874, or 1875. It was certainly rather a strange phase that the shipbuilding trade passed through during the ten or twelve years ending with the year 1872, in respect of the adoption of the composite type of build, more especially for sailing vessels."—*Notices of some of the Principal Manufactures of the West of Scotland*, p. 174.

in 1816, the *Castle Forbes*, a vessel built for the Indian trade, was launched. In 1817, 20 ships were launched, with a total tonnage of 2770; and in the following year 22 vessels were built, with a total tonnage of 3300 tons; from this time onward for about half a century the trade continued to extend.

Mr. Alexander Hall, of A. Hall & Sons, introduced the "clipper" type of vessels, and, in 1830, he built the *Scottish Maid*, a vessel of 142 tons, which showed the advantages of sharp lines. This vessel was much admired, and, shortly after, the Aberdeen shipbuilders became famous for their clipper ships. A large number of the vessels employed in the Australian emigration trade were built at Aberdeen. In 1854, the Messrs. A. Hall & Sons launched the *Schomberg*, a vessel specially constructed for the Australian passenger trade, and she was one of the finest and largest vessels then afloat.[17] She was 262 feet in length, 45 in breadth, and 30 in depth, and of 2600 tons burthen. Other vessels of a similar description were built; but the general introduction of iron shipbuilding has had the effect of checking the prosperity of shipbuilding in Aberdeen. Although the Aberdeen firms have built iron steamers of a high class, still the substitution of iron for wood has produced extremely depressing effects upon the shipbuilding industry, not only in Aberdeen and all round the coasts of the Moray Firth, but also in the smaller seats of shipbuilding throughout the country.

In 1868, there were six shipbuilding firms in Aberdeen, the yards of the Halls and the Duthies being the oldest establishments; and there were then between 1000 and 2000 persons employed in the trade; but in recent years the hands employed have not exceeded 500 or 600. At the above date there were considerable shipbuilding establishments at Peterhead, Banff, Inverness, and other ports on the Moray Firth where wooden vessels were built. But the introduction of iron steamers in the London trade, in the coasting and coal-carrying trade, has almost totally extinguished shipbuilding at these ports, and a similar result has been produced in other parts of the country. Thus the ultimate effect of the change from timber shipbuilding to iron shipbuilding has been to concentrate the building of large vessels on the Clyde; and to it I will now proceed.

In a preceding chapter the earliest attempts at steam navigation

[17] This vessel was described in the article "Shipbuilding," in the ninth edition of the *Encyclopædia Britannica*.

were indicated ;[18] and, without entering into long details, a brief account of the introduction and the actual working of the first steam vessels is full of interest. The first steamboat that actually worked successfully in this country began to ply, in January, 1812, between Glasgow and Helensburgh. She was called the *Comet*, and continued to run on the Clyde till October, 1820, when she was wrecked rounding the Point of Craignish. The projector and owner of this boat was Henry Bell, a house carpenter or builder, and from his design she was built by Messrs. John Wood & Co., Port-Glasgow ; and John Robertson, of Glasgow, constructed and fitted up her engine, which was of three horse-power. Her length of keel was 40 feet, breadth of beam 10 feet 6 inches, drew 4 feet of water, and was about 25 tons burthen. Another steamboat was built the same year, and in 1818 there were eighteen of these boats on the Clyde. The early built steam vessels were all of small dimensions, but improvements were soon introduced, and the building of steamers and the construction of suitable and powerful engines were rapidly developed.

The tonnage of the steamers gradually increased, and lines of traffic were established between Glasgow, Greenock, and Liverpool, and between the Clyde and Belfast. The lines of traffic were soon extended to every quarter of the globe, the speed of the steamers was increased, and the regularity with which they performed their voyages was remarkable. The screw-propeller was invented about 1836, and many improvements were made in marine engines by the Clyde shipbuilding and engineering firms. In 1840, Mr. Robert Napier built four steamers for the newly-formed Cunard Company, and these vessels ranged from 1135 to 1175 tons burthen, and they had engines of 440 horse-power each. They were designed for the Transatlantic navigation, and were named the *Britannia*, the *Acadia*, the *Caledonia*, and the *Columbia*. On the 19th of June, 1840, the *Britannia* steamed off from Liverpool, and arrived in the harbour of Boston on the 4th of July, amidst the cheers of the citizens. Although she was not the first steam vessel that had crossed the Atlantic, nevertheless her passage and arrival at Boston opened a

[18] By an oversight I neglected to refer to the efforts of Lord Stanhope, who, in 1790, took out his patent for the propulsion of ships by steam. "He adopted paddles, placed under the quarters of the vessel, which were made to open and shut like the feet of a duck." He got a flat-bottomed boat specially constructed for the purpose, and a trial was made in Greenland Dock, but the boat only attained a speed of three miles an hour, and his plan was abandoned.

new era in the history of commerce. The Cunard Line of steamers soon became well known throughout the civilised world.

Among the enterprising shipbuilders of the Clyde at this period may be mentioned Mr. Robert Napier; Messrs. Steel & Co., Greennock; Messrs. Wood, of Port Glasgow; and Mr. William Denny, of Dumbarton; but at the same time a number of engineering firms on the Clyde were directing special attention to marine engines.

In Scotland iron shipbuilding was begun in 1818, when the "Vulcan," a passenger boat for the Forth and Clyde Canal Company, was built by Mr. Robert Wilson, at Faskine, near Airdrie. Before this, some one or two small iron boats had been built in England. The "*Vulcan*" was designed by the late Sir John Robinson, of Edinburgh, and she was so compactly constructed that she plied on the canal for upwards of half a century. Between the years 1853 and 1865 "inventors have come forward and patented what they fancied were improvements in the construction of iron ships, but when the way to prosperity seemed clear before them, an examination of the old '*Vulcan*' has shown that they had been forestalled, and consequently the patents became null; two patents relating to the keels of iron vessels were cancelled when the keel of the canal boat was examined."[19] In 1827, the "*Cyclops*," an iron boat for canal service, was built. The same year Mr. David Napier built the "*Aglaia*," an iron boat, which plied on Loch Eck; and in 1831, Mr. Neilson, of Oakbank, built the "*Fairy Queen*," which plied as a passenger steamer on the Largs route. Messrs. Wingate & Co. built their first iron vessel in 1832. Shortly after, the firm of Messrs. Tod & Macgregor was formed, and directed special attention to the building of iron steam vessels; before the year 1840, they had attained a reputation in this department. The more notable of their iron steamers built before this date were the *Royal George*, the *Royal Sovereign*, and the *Princess Royal*; the latter was a steamer of 800 tons burthen, and was specially remarkable for her swift sailing; but great strides were afterwards made in this branch of shipbuilding.

The vessels built continued to increase in size, and the reputation of the Clyde shipbuilders rose higher. The result was that the great shipping and steam navigation companies sent many of their orders for new ships to the builders on the Clyde. The marine engineers of Glasgow and all along the Clyde exerted themselves to the utmost

[19] *Industries of Scotland*, by Bremner, p. 65.

to improve the engines and boilers, and to utilise and economise the power of steam; while persistent and supreme efforts were made to improve the condition of the river, to deepen and widen it, so that the largest ships might have sufficient depth of water to float upon it. In no quarter of the world has there ever been a greater application and development of mechanical science than that which has taken place on the banks of the Clyde in the present century.

In 1852, Mr. John Elder joined Mr. Charles Randolph, who then carried on a large engineering establishment, and they signalised themselves by improvements in marine engines. They successfully applied the compound high and low pressure cylinder engines to marine purposes; and they afterwards commenced shipbuilding, and founded the Fairfield yard, one of the largest in Scotland. In the years 1861 to 1865 this firm built 43 vessels, with a total tonnage of 43,500; and in the years 1866 to 1875 they built 134 vessels, with a total tonnage of 222,523. In 1870, they launched the *Italy*, an iron screw steamer of 4200 tons burthen, 600 horse-power, and 400 feet in length; in 1870 and 1871 they built two steamers for the coast trade between Aberdeen and London—the *Ban Righ* and the *City of London*—which were notable for their speed and economy of fuel.

Since the middle of the century a considerable number of war-ships have been built on the Clyde; while the machinery of many others, built elsewhere, has also been supplied from the Clyde. In 1871, there were six war-vessels built on the Clyde; in 1874, there were four; and in 1875, three. At the middle of the century the total annual tonnage of the ships launched on the Clyde was about 23,000; in 1859, the total tonnage of the vessels built was 35,709; and in 1865, the tonnage of the vessels was 153,932. The following table shows the number of vessels built and their tonnage in five successive years:—

1871	Number of vessels		131	Tonnage	196,200
1872	„	„	227	„	224,000
1873	„	„	194	„	261,500
1874	„	„	225	„	266,800
1875	„	„	276	„	228,200

In 1880, the total tonnage of vessels built and launched on the Clyde was 248,656, which shows an increase of over 20,000 tons in five years.

In 1871, there were upwards of 16,000 persons engaged in shipbuilding in Scotland, and of this number about 4000 were employed in iron shipbuilding; the latter number has since largely increased, owing to the general introduction of iron shipbuilding. Of the total number upwards of 10,000 were employed on the Clyde, including Dumbarton. In 1891 there were 23,253 hands (exclusive of labourers), of these over 17,000 were employed on the Clyde.

But the shipbuilding trade often fluctuates. The following table shows the total tonnage of vessels built and launched on the Clyde in ten successive years :—

Year.	Tonnage.	Year.	Tonnage.
1881	327,113	1886	172,765
1882	282,671	1887	184,794
1883	404,383	1888	273,631
1884	262,022	1889	336,065
1885	192,392	1890	352,124

Within the last fifteen years steel has almost superseded iron in shipbuilding. Important improvements also have been made in the structure of ships for increasing speed, and securing comfort and safety. Improved water-tight compartments have been adopted in all passenger ships; and water-ballast tanks when full cargoes outward and homeward cannot be obtained.

Section V.

Glass and Earthenware Manufactures.

The manufacture of glass was introduced into Scotland early in the seventeenth century, as noticed in the third volume.[20] But this useful and indispensable industry was for long hampered by the imposition of a duty on the manufactured glass, which was not finally repealed until 1845. There are various kinds of glass: (1) The common bottle glass; (2) the cheap, broad or spread window glass; (3) crown glass or window glass, formed in discs or large circular plates, and this variety is peculiar to Britain; (4) flint glass, crystal glass, or glass of lead; (5) plate or fine mirror glass. But only two of these kinds are made to any extent in Scotland—flint glass and bottle glass.

[20] Mackintosh's *History of Civilisation in Scotland*, Vol. III., pp. 315-16.

The principal flint glass manufacture is in Edinburgh, in the Canongate, and has been long known as the Holyrood Glass Works, which were commenced by Mr. Ford about the opening of this century. There are two furnaces in the works, which contain 22 pots; and the furnaces consist of large cones of brickwork, which are pierced with a series of openings corresponding to the number of pots in each. In the centre of each cone a great fire is kindled, and the flames and heat from it are drawn through flues and brought into contact with the pots, which are arranged round the interior of the wall. The pots are made of a particular kind of clay, which can withstand intense heat without cracking or giving off any matter that would be injurious to the glass. The pots do not last long, and require to be frequently renewed. The removing of a broken pot and the insertion of a new one is an extremely difficult and trying operation; besides the waste of the pots, the furnace itself requires to be entirely reconstructed at the end of nine or ten years.

The pots for making bottle glass are open, and the flames and smoke come into contact with the "metal;" in the case of flint glass this arrangement would not suit, as the smoke would spoil the purity of the glass, and the flint glass pots are made so as to prevent direct contact between the "metal" and the fire. "The pots are charged every Saturday morning. Each contains about 18 cwt. of glass, the ingredients for which are put in gradually as the fusion proceeds, from twelve to fifteen hours being required to complete the charging. Though the ingredients become melted in that time, the 'metal' is not in a fit state for working owing to the presence of air bubbles, which can be got rid of only by urging the furnaces to its utmost intensity, and maintaining it there at from thirty to forty hours, the mouths of the pots being sealed during that time. The glass is ready for working by an early hour on Monday morning. There are two sets of workmen, who relieve each other every six hours, and the work goes on constantly from Monday until Friday. The weekly consumption of coal is about twenty tons to each furnace.

"Under the intense heat to which it is subjected, in order to get rid of the gaseous bubbles, the glass becomes nearly as fluid as water, and in that state could not be worked. Before the blowers begin operations the temperature of the pots is lowered until the 'metal' assumes the consistency of treacle. The tools used by the workmen are exceedingly simple. . . . Owing to the peculiar nature of the material the formation of articles in glass depends more upon the

skill, the expertness, and tact of the manipulator than upon the employment of complicated appliances. The surface of the glass would be spoiled by a free use of metal tools, and almost the only implements employed are composed of charred wood. The operations of the glass-blowers are probably the most wonderful in the whole range of the arts, no manipulation of the conjurer being more mysterious to one who witnesses them for the first time." [21]

There are upwards of 200 persons employed at the Holyrood Glass Works. There are six or seven flint glass and eight bottle manufactories in Scotland. The value of the glass exported in 1861 was £62,140, and in 1867, £106,555. The chief centres of the glass manufacture are Glasgow, Edinburgh, and Leith; and, in 1871, there were 2020 persons employed in it, and of this number 88 were females. In 1891 there were 2084 hands employed in glass manufacture.

The art of glass engraving is also carried on in Scotland, though only since a recent date. The firm of Messrs. Millar & Co., of Edinburgh, has attained distinction since the Exhibition of 1862; and they have shown some fine and beautiful specimens of this branch of art.

Glass painting has been revived in Scotland in the present century. The firm of Messrs. Ballantine, of Edinburgh, has been long well known for the excellence of its work in this branch of art. About fifty years ago Mr. Ballantine was selected by the Fine Arts Commission to execute the windows in the new House of Lords; and he did much to promote the improvement of glass painting in Scotland. Painted glass is now pretty extensively used in public buildings, churches, and in some of the houses of the wealthy class. This art has reached a high degree of elaboration, and specimens of it may be seen throughout the country which exhibit fine taste and skill in execution.

It was shown in the third volume [22] that there were no earthenware works in Scotland in 1703; and one of the earliest potteries was established at the Broomielaw, Glasgow, in 1748. Glasgow is still the chief centre of this manufacture; Edinburgh and Kirkcaldy come next. The largest Glasgow pottery is that of Messrs. Bell & Co., which covers upwards of three acres of ground. This firm has devoted much care and attention to the higher departments of the art, and has produced some fine work. There is a wide field afforded

[21] *Industries of Scotland*, by D. Bremner, pp. 378-379. [22] P. 317.

for the exercise and display of artistic taste and elaboration in the decoration of porcelain; and both in form and colouring many of the productions of this firm are very beautiful. They employ upwards of 800 persons.

In 1871, there were fourteen potteries in Scotland, and there were about 4000 persons employed in this manufacture. In 1891 there were 4,128 hands employed.

In 1871, there were 123 manufactories of brick, tiles, clay pipes, and articles of a similar description, which were spread throughout the country. The largest work of this kind is at Garnkirk, about six miles east from Glasgow, on the side of the Caledonian Railway. At this establishment there is an extensive manufactory of glazed fireclay sewage and water pipes. Works in terra cotta are also produced at Garnkirk. There are about 300 men and boys employed, and 200 tons of clay are used daily at the works. In 1891 there were 5000 persons employed in connection with this useful industry.

Section VI.

Textile Manufactures.

In the preceding volumes the progress of textile manufactures in Scotland to the end of the seventeenth century was narrated so far as they had then been introduced, for the manufacture of cotton was not introduced into this country till well through the eighteenth century. It will save repetition to present a short account of the inventions of the eighteenth century in connection with the spinning and weaving of textile fabrics.

Before the middle of the eighteenth century the improvement of spinning and weaving machinery began in England, and long before its close great progress had been made. In 1738, John Kay, a native of Bury, in Lancaster, invented the fly-shuttle, which enabled the weaver to make twice as much cloth as he made before; and his son, Robert Kay, invented the drop-box, by which the weaver can use any one of three shuttles, each with a different coloured weft, without the trouble of taking them from and replacing them in the lathe. The great impediment to the progress of textile manufactures was the impossibility of obtaining an ample supply of yarn by the appliances then in use. The one-thread wheel, although then worked from morning till night in many thousands of cottages, could not keep up with the weaver's shuttle or the demand of the merchant.

Genius, therefore, had to remove this difficulty, and at length a contrivance was invented by which fifty, a hundred, or a thousand threads could be spun at once by one pair of hands. As to who was the real originator of this achievement has been a subject of much controversy, to which I can only allude in the briefest terms. It seems to be clearly ascertained that John Wyatt, of Birmingham, was the inventor of the mode of spinning by rollers.[22] The patent for the invention was taken out in 1738, in the name of one Paul, with whom Wyatt was in partnership; the name of the latter only appears as a witness, although there is evidence to show that Wyatt was really the inventor of the machine. It was tried and produced yarn, but it does not seem to have been successful for some time, and it yielded no fruit to Wyatt. Regarding Wyatt's machine, Mr. Baines says:—"So far is the one from being a copy of the other, that of Arkwright indicates great inventive talent even if we suppose he had seen the former machine; but the mechanical details of the two have so little in common that I am inclined to think . . . that Arkwright had not seen the machine of Wyatt. It must, however, be admitted that to contrive and adjust the details of such a machine, though of the greatest practical importance, is a merit very subordinate to that of him who conceived the great principle. The latter is the glory of Wyatt. How much Arkwright owed to his predecessors can only be matter of conjecture; that he thus learned the principle of spinning by rollers I am convinced. . . . The latter unquestionably knew of the attempts to spin cotton by machinery at Birmingham and Northampton, and of the patent of 1738, which describes the two pairs of rollers, as he himself declares as much in the case which he drew up to be presented to Parliament in 1782."

But whatever may have been the claims or the merits of Arkwright's predecessors, it was he who rose from a very humble position and perfected and successfully introduced the invention of spinning by rollers. He was for many years engaged in perfecting his method of spinning cotton, and his sagacity and perseverance were at length rewarded, for he became exceedingly rich. "Wealth flowed in upon him with a full stream from his skilfully managed concerns.

[22] "Having thus proved that the principle of Wyatt's invention was the same as that of the spinning frame brought into use by Arkwright, I must add that the details of the Birmingham machine were far from being perfect, and that the machine differed greatly from Arkwright's in its form and construction."—Baines' *History of the Cotton Manufacture*, pp. 121-138.

For several years he fixed the price of cotton twist, all other spinners conforming to his prices. . . . It has been shown that the splendid inventions, which even to the present day are ascribed to Arkwright by some of the ablest and best-informed persons in the kingdom, belong in a great part to other and much less fortunate men. . . .

"The most marked traits in the character of Arkwright were his wonderful ardour, energy, and perseverance. He commonly laboured from five o'clock in the morning at his multifarious concerns till nine at night. . . . Arkwright was a severe economist of time; and that he might not waste a moment, he generally travelled with four horses and at a very rapid speed. His concerns in Derbyshire, in Lancaster, and in Scotland were so extensive and numerous as to show at once his astonishing power of transacting business and his all-grasping spirit. In many of these he had partners, but he generally managed in such a way that whoever lost he himself was a gainer. So unbounded was his confidence in the success of his machinery and in the national wealth to be produced by it that he would make light of discussions on taxation, and say that he would pay the national debt. His speculative schemes were vast and daring; he contemplated entering into the most extensive mercantile transactions and buying up all the cotton in the world in order to make an enormous profit by the monopoly." [24]

Thus the fly shuttle was invented by Mr. John Kay in 1738; the same year Mr. John Wyatt invented a machine for spinning by rollers, and showed its practicability; Mr. James Hargreaves [25] in-

[24] Baines' *History of the Cotton Manufacture*, pp. 140, 193-196. Arkwright made a considerable sum of money by his patents. He offered his patented machines for sale by public advertisement, and gave many permission to use them, on receiving a certain sum for each spindle; in several cases he took shares in the mills erected; while he had several large mills chiefly in his own hands, and from these various sources he drew a large annual income.

[25] James Hargreaves was a native of Standhill, near Blackburn; and, shortly after 1770, he entered into partnership with Mr. Thomas James, a joiner, and they erected a small mill at Hockley, in which they spun yarn for the hosiers with the jenny. This spinning business was carried on with fair success, until the death of Hargreaves in 1778. Although he did not amass wealth like Arkwright, he was enabled to live comfortably in the latter years of his life; but many afterwards made fortunes by means of his invention.

The stocking-frame was invented by William Lee in the reign of Queen Elizabeth; but a prejudice against it long prevailed, and it was not used in Scotland till 1771, when a stocking frame was set up in the town of Hawick.

vented the spinning-jenny about 1767, which he patented in 1770; and Arkwright, about the year 1769, invented the spinning-frame, sometimes called the water-frame, which he patented; and in 1779, Mr. Samuel Crompton completed his invention of the mule-jenny, which combined the action of both the preceding machines. But Arkwright introduced other improvements in carding, drawing, and roving machines. In 1785, the Rev. Dr. Cartwright invented a power-loom which has been usually regarded as the forerunner of those subsequently introduced. The mechanical inventions just enumerated indicate the commencement of a revolution in the modes of producing textile manufactures; although most of them were originally intended for the cotton manufacture, the application of machinery was extended to the whole circle of textile fabrics. It is needless to say that in the present century, the machines, the apparatus, and the appliances brought into use in this department of manufactures have reached an astonishing degree of perfection.

I. I now proceed to indicate the development of the woollen manufactures in Scotland. The woollen manufacture for many centuries has been carried on to a greater or less extent in all the counties of the kingdom; though, of course, in early times, the greater part of the produce was for home consumption. In the second quarter of the eighteenth century the manufacture of woollen goods consisted of the cheaper and coarser kinds, such as cheap serges made at Kilmarnock, Stirling, Aberdeen, and other places; Galashiels produced kerseys, and in Hawick and other Border towns blankets were made. At this period only a small quantity of woollen goods was exported.

The woollen and hosiery manufactures continued to extend. In 1776, it was recorded that in Stirling 160 looms, 38 stocking-frames, and 17 carpet-frames were employed; Kilmarnock had 66 looms engaged on carpets, and 80 on other branches of manufacture; in Montrose there was a woollen factory in which 70 hands were employed; in Alloa there were twenty manufacturers, who employed 150 looms and upwards of 400 workers; in Ayr there were 100 looms and 15 stocking-frames. In Edinburgh and Leith blanket-making, carpet-weaving, and stocking-knitting on frames were carried on; and Edinburgh and Leith had wool markets. There were 140 looms in Melrose, chiefly engaged in making woollen cloth; in Hawick there were 65 looms; in Kelso 40 looms were employed in making blankets and flannels; and in Peebles 40 looms were engaged

in making coarse woollen goods; in Galashiels, then only a village, there were 30 looms and three waulk mills. In Haddington a considerable manufacture of woollen goods was carried on; in Glasgow there was then only one woollen factory. In Perth, Linlithgow, and other places, woollen cloth, carpets, and stockings were manufactured. In Aberdeenshire a considerable trade was carried on in cloth and stocking manufactures; Peterhead had two woollen factories which turned out goods to the value of £110 a-week; and the people of Ellon knitted stockings by the hand to the value of £100 a-month. In Aberdeen there were about 200 looms engaged on woollen manufactures; and the value of the hosiery goods produced in the city amounted to £120,000 per annum: this was then the staple trade of the town. The woollen manufacture was carried on to some extent in Inverness and Elgin; the latter city produced yarn to the value of £15,000 annually, which was chiefly sent to the London and Glasgow markets.

During the last ten years of the eighteenth century and the first quarter of this one, a marked progress took place in the woollen manufacture of Scotland. New machinery and improved carding and spinning appliances were introduced; and a few years later the power-loom was successfully brought into operation in this department of textile manufacture. In Aberdeen machinery was introduced into the woollen manufactures in 1790, by Mr. Charles Baird, who brought from England two carding-engines and four spinning-jennies; and he erected a mill on the river Don, about two miles from Aberdeen. At Galashiels carding-machines and spinning-jennies were introduced in 1791; and twelve years after, six new woollen factories had been erected in this enterpising town. In 1814, spinning "mules" were introduced there, by which one man was enabled to work 500 spindles; and the shearing also was simplified and perfected in 1819. This manufacturing town has been long famous for its coloured tweeds and tartans, and other woollen fabrics. In 1828, the number of looms employed was 175, and in 1838, 265. The population of the town at the latter date was about 2500, aud it has since continued to increase. But hand labour has been superseded by machines in every department. It has now a population of upwards of 17,000; and, in 1871, it had 76 sets of carding-engines, and about 70,000 spindles. Carding-engines were introduced into the woollen manufactures in Hawick about the end of the last century.

In 1825, the number of persons employed in the various branches

of the woollen manufacture in Scotland was 24,000. In 1831, the power-loom was introduced into the woollen manufacture, and the rate of production was much increased. The superfine broadcloths manufactured in Aberdeenshire began to compete successfully in the London markets with the productions of the English looms; while the rapidly advancing prosperity of the nation created an increasing demand for narrow cloths, tartans, tweeds, flannels, and other kinds of woollen goods. The tweed and cloth branches continued to advance, new machinery and improved appliances were from time to time brought into operation; and, step by step, competition in the markets of the world became keener and keener, and every nerve was strained to the utmost to produce cheap and marketable goods. The tweed manufacturers have devoted great attention to colours and dyeing, and the resources of chemical science have been called into requisition in this art.

In 1812, the hosiery manufacture of Scotland had attained a considerable development, as there were then 1449 stocking-frames in operation, which were spread over thirty-eight different towns and villages; and this branch of industry still continued to expand. In 1844, a census of the trade was taken, and it was found that there were 2605 frames, distributed thus:—In Hawick and its vicinity, 1200; Dumfries and vicinity, 500; Edinburgh and vicinity, 150; Glasgow and Kilmarnock, 280; Selkirk and vicinity, 128; Perth, 108; Langholm, 92; Denholm and vicinity, 87; and Jedburgh and vicinity, 60. In 1871, the number of stocking-frames in Scotland was about 1650, of which 900 were in Hawick and 400 in Dumfries, and in both places power-frames were at work. The goods in the Scotch hosiery branch of trade consist of stockings of every description, drawers, under-shirts, and other articles of common use, and what is called fancy goods, such as tweed hose, shooting-socks, and a variety of goods in bright and variegated colours. Hawick and Dumfries have been long well-known centres of this department of the woollen manufacture.

Carpet-making as a branch of manufacture was begun in Scotland in the second quarter of the eighteenth century, and in 1735, it had attained to some success in Kidderminster. The first kind of Scotch carpet was the two-ply fabric, into which two colours only can be woven, which renders the range of pattern very limited. It was known under the name of Kidderminster carpet, and it became popular.

The manufacture of carpets was established in Kilmarnock in 1777, when eighty looms were employed. In this enterprising town the manufacture of carpets continued to extend, and it has long enjoyed a wide reputation for its products in this branch of industry. In 1825, there were 800 carpet-weavers in Kilmarnock, each producing about six yards of carpet a-day, and were paid at the rate of $3\frac{1}{2}$d. to $4\frac{3}{4}$d. per yard. At this time there were 1200 carpet-weavers in Scotland. New appliances were devised, and the quality and patterns were greatly improved. Carpet-manufacture is now carried on in Glasgow, Aberdeen, Ayr, and Paisley. Various kinds and qualities of carpets have been produced for many years in Scotland, such as Brussels carpets, Turkish, Wilton, patent tapestry, and other varieties. In 1891 there were 6000 hands employed in this branch.

An extensive manufacture of bonnets has been carried on in Kilmarnock for upwards of two centuries. The manufacture of this class of goods in Kilmarnock, Kilmaurs, and Stewarton, which are all near each other, in 1869, was estimated at the gross yearly value of £150,000, and £48,000 a year was paid in wages.

In 1875, the number of woollen factories in Scotland was upwards of 250, and of these 102 were engaged in spinning only, while 40 were employed in weaving only, and 105 were employed both in spinning and weaving.

In 1871, the number of people employed in the woollen and worsted manufactures in Scotland was 42,217. Of this number 18,403 were males, of whom 4230 were under twenty years of age; while the large number of 23,815 were females, of whom 9115 were under twenty. In 1891 there were upwards of 43,000 hands employed in this department of manufacture.

In Orkney and Shetland, in 1891, 5,370 persons were employed in the woollen and worsted manufactures, chiefly in making knitted goods, which have long been well known.

Touching the several branches of the woollen manufacture, there were 6226 employed in making knitted goods; in making worsted 1448 were engaged. In the wincey manufacture there were 916 hands employed. In the carpet and rug branch there were 6684 persons employed; in the woollen bonnet manufacture there were 3070 persons engaged; but only 100 persons were returned as engaged in the blanket and flannel manufacture.

II. The state of the linen trade in Scotland has been narrated in the preceding volumes, down to the end of the seventeenth cen-

tury; and I quoted the Stamp Act of 1693, which, among other provisions touching the qualities and the breadth of linen made in Scotland, enacted that all linen cloth offered for sale should be regularly stamped. Linen was the staple manufacture of Scotland in the eighteenth century, and the Union was favourable to its progress. The Board of Manufactures, established in 1727, endeavoured to promote the manufacture of linen; and the British Linen Company, incorporated at Edinburgh in 1746, contributed to extend the linen trade by advancing money to the manufacturers. This company is now known under the name of the British Linen Company Bank.

In 1710, the quantity of linen produced was 1,500,000 yards, and, in 1720, Scotland exported to England alone £200,000 worth of Scotch linen. In 1727, the manufacture of linen was carried on more or less in twenty-five counties; and the quantity produced in each varied from 65 yards in Wigtonshire to 595,821 yards in Forfarshire; Perth, Fife, and Lanark came next in order. Afterwards linen was made in all the counties except Peebles, but Forfarshire has kept the lead throughout; in some of the counties and small towns in the country a considerable trade was done in linen-making in the eighteenth century, in which it has long ago been dropped.

In 1772, there were 252 lint-mills in Scotland, distributed through the country thus:—In Ross, 3; Caithness, 1; Elgin, 3; Banff, 8; Aberdeen, 7; Kincardine, 2; Forfar, 31; Lanark, 31; Perth, 73; Renfrew, 3; Linlithgow, 4; Dumbarton, 16; Stirling, 28; Fife, 11; Edinburgh, 1; Dumfries, 1; and Haddington, 1. About the same time, it was reported that new kinds of manufactures had been introduced in Paisley, and that the spinning of silk and the woollen and cotton manufactures had been extending.

In Orkney the making of linen yarn from home-grown flax was introduced in 1747, and the trade gradually spread over most of the islands. The yarn gained a reputation in southern markets, and from 1750 till 1785 a considerable quantity of yarn was annually exported; but after that time the trade declined, and it was dropped about the end of the century. Weaving was introduced at the same time as spinning, but the greatest quantity produced in any one year did not reach 30,000 yards. A large hemp factory was established at Inverness in 1765, and for a time nearly 1000 persons were employed. A company began the manufacture of linen thread at Inverness in 1780, which carried on a successful business for a number of years,

and gave employment to 10,000 persons throughout the county, most of whom worked at their own homes. The flax was imported from the Baltic ports, and the thread was sent to London, and thence spread over the world. In 1822, the quantity of linen stamped for sale in Inverness was 318,465 yards; but from that date the trade declined till it became extinct in the county. In Aberdeenshire a large number of hands were engaged in the manufacture of linen yarn and cloth in the eighteenth century. In 1794 a considerable manufacture of thread was carried on in Peterhead; there were 52 twist mills in the town. Thread and linen cloth were also manufactured in Huntly, in Kincardineshire, and at Bervie, where a mill was erected for spinning linen yarn in 1787.[26]

There was a marked improvement in the quality of linen goods produced in Scotland, as well as a large increase in the quantity annually manufactured before the end of the eighteenth century, as the following table indicates, which is taken from the record formed under the Stamp Laws:

Years.		Number of Yards.	Estimated Value.
1728	...	2,183,978	£103,312 9 3
1738	...	4,666,011	185,026 11 9
1748	...	7,353,098	293,864 12 11
1758	...	10,624,435	424,141 10 7
1768	...	11,795,437	599,699 4 2
1778	...	13,264,410¾	592,023 5 4½
1788	...	20,506,310½	854,900 16 0¾
1798	...	21,207,059	850,403 9 9
1808	...	19,390,496	1,014,629 18 4
1818	...	31,238,100¼	1,253,528 8 0½
1819	...	29,334,428¼	1,157,923 4 11
1820	...	26,259,011¼	1,038,708 18 5
1821	...	30,473,461¼	1,232,038 15 4¾
1822	...	36,268,530¼	1,396,295 19 11½

These figures show that the linen manufacture had advanced pretty steadily for about a century. It has, of course, had to compete with its rival, cotton, which attacked it in many localities, and especially in the west of Scotland. The result has been to concentrate the linen manufacture in a few localities which, from various causes, were well suited and advantageously placed for the successful prosecution of

[26] *Statistical Account of Scotland.*

this branch of industry, while the introduction of machinery, the power-loom, and highly improved appliances set into operation in the large factories, soon rendered it impossible for the small mills throughout the country to compete in the markets of the world with them. Hence the disappearance of the linen manufacture in many of the counties where it was once carried on, and a similar result has taken place in shipbuilding.

Dunfermline has long had a wide reputation for linen manufactures. It is the chief seat of table linen manufacture in Britain. For upwards of a century the linen manufacturers of Dunfermline have devoted great attention to this branch, and exerted their utmost skill to perfect it, and the result was that they attained, and have long held, a leading position in their special industry.

The largest work in Dunfermline is the St. Leonard's Power-Loom Factory, which is placed on the south side of the town, and is reported to be a model establishment. In 1869, it had 900 power-looms and 180 hand-looms, and the firm to which it belonged—Messrs. Beveridge & Co.—gave employment to 1500 persons, the greater portion of whom were females. The quantity of linen produced by the firm per week averaged 200,000 square yards, and its value per annum was £360,000.

At the above date it was calculated that there were in Dunfermline 2670 power-looms and upwards of 1000 hand-looms, all in operation. There were over 2100 hands employed, and the total quantity of linen cloth annually produced was over 30,000,000 square yards —"which, formed into a web of the uniform width of one yard, would measure the distance between Great Britain and New Zealand, with a thousand miles or so to spare." The value of the linen goods then produced in Dunfermline nearly reached £2,000,000 per annum.[27] In 1891 there were 2,375 persons employed in the linen manufacture, and 229 in the cotton manufacture in Dunfermline.

During the present century the linen manufacture has been extensively carried on in Arbroath, Forfar, Kirkcaldy, Montrose, and Aberdeen; but Dundee became a centre of the linen trade, and for about twenty years it had a monopoly of the manufacture of jute.

The jute trade is quite a recent development. The jute manufacture only began in 1835, and for some years so little progress was made that, in 1838, only 1136 tons of it were imported into Dundee. From this time onward the quantity of jute annually imported into

[27] *Industries of Scotland*, by D. Bremner, pp. 242-246.

Dundee increased at an enormous rate, in 1853 it rose to 15,400 tons; in 1858, it was over 30,000 tons, and, by the year 1868, the annual consumption of jute in Dundee had reached the figure of 60,000 tons. There are many large flax and jute factories in Dundee, and the jute manufacture has proved a source of wealth to the city.

When the jute was first introduced, it was only used for making goods of a coarse description; but, by improvements in the machinery and experience in working it, sheetings and many other kinds of goods were manufactured solely from it. A variety of goods are manufactured from jute and cotton mixed. In 1867, at some of the large jute works in Dundee over 4000 hands were employed. At the same date it was recorded that "the capital invested in the factories in Dundee is stated to be £2,500,000; in the district of which that town is centre, £2,200,000; in other parts of Scotland, £1,000,000—total, £5,700,000, to which has to be added the value of the bleaching-works, calendars, etc., in the trade, which cannot be put down at less than £1,300,000. It takes about six months from the purchase of the raw material before the goods can be manufactured or the proceeds drawn, so the stock-in-trade of manufacturers and merchants will amount to £5,000,000. It would thus appear that a capital of £12,000,000 is required for carrying on the linen trade of Scotland."[28]

In 1871, there were upwards of 200 flax, linen, and jute factories in Scotland, and the total number of persons employed in all the branches of those manufactures was about 91,000. Of this number upwards of 61,000 were females. The chief centres of the linen and jute manufactures are the three counties of Forfar, Fife, and Perth; the manufactures are carried on in the chief towns of these counties, with Dundee as the metropolis. The manufacture of linen and jute is carried on in some of the other towns; in Glasgow there were 2000 hands employed on flax and jute, and in Aberdeen 1800.

Touching the different branches of the linen and jute manufactures, in 1862 there were 27 jute factories in Scotland, which had 30,538 spindles, 554 power-looms, and 5418 hands employed; the greater part of these were in Dundee. But, in 1875, there were 84 jute factories, classified thus:—(1) Fifteen were engaged in spinning, and these had 115 carding machines, 18 combing machines, 33,527 spinning spindles, 1080 doubling spindles; (2) nineteen were em-

[28] *Industries of Scotland*, by D. Bremner, p. 269.

ployed in weaving, and these had 1384 power-looms; (3) fifty were employed in spinning and weaving, and these had 747 carding machines, 42 combing machines, 151,892 spinning spindles, 6578 doubling spindles, and 6941 power-looms. In these jute factories there were then 37,943 persons employed, and of this number 21,350 were females.

In making linen thread there were 240 persons engaged, of whom 143 were females. There were 184 hands employed in the linen lace manufacture; in making sheeting, ticking, and tape, there were 168 hands employed, of whom 71 were females. In the jute carpet manufacture 91 persons were employed.

III. The manufacture of cotton was not introduced into Scotland till past the middle of last century. Cotton is not grown in this country, a circumstance of great moment, as was shown during the late American War; while wool and flax have been produced at home in smaller or greater quantities from very early times, although large quantities of both are annually imported.[29] But the cotton manufacture has attained a remarkable development in Scotland. An account has already been given of the mechanical inventions which were made in England; and the introduction of machinery which followed thereupon was at first almost entirely applied to the cotton manufacture, and from it transferred and gradually made suitable to the other departments of textile manufactures. Although there are many appliances specially suited for each of the great branches of textile manufacture, the application of steam-power to the processes of preparing the raw materials, and the use of the

[29] The cultivation of flax was one of the objects which Lord Kames endeavoured to promote and extend in Scotland. In the year 1765, he published a pamphlet on the progress of "Flax Husbandry in Scotland," with the patriotic aim of stimulating his countrymen to continue and redouble their efforts in this valuable branch of national industry. He showed that the linen manufacture had made great progress between 1727 and 1765; and he insists on the expediency of encouraging and prosecuting the culture of flax at home. At the date of Kames' pamphlet the annual value of the foreign flax imported into Scotland was £110,000 sterling; but the yearly saving of this large sum is not the only or the chief benefit to be reaped from raising the commodity on our own fields. "Experience has shown that the commodity itself, when of home growth, is of a superior quality to the foreign: and experience shows also that no crop is more valuable to the farmer or yields a quicker return for the labour and cost of cultivation." Lord Kames' pamphlet was reprinted in the *Scots' Magazine* for January, 1766.—Tytler's *Memoirs of the Life of Lord Kames*, Vol. II., pp. 60-62.

power-loom in spinning and weaving, has greatly increased production.

The first cotton mills in Scotland were one erected at Rothesay in 1778, and another at Penicuik about the same time, which were soon followed by others. In 1787, there were 19 cotton mills in Scotland, all driven by water; and they were distributed thus:—4 in Lanarkshire, 4 in Renfrewshire, 3 in Perthshire, 2 in Midlothian, and 6 in other places. At that time labour was cheap and hands were easily obtained. The few simple operations which required to be performed in the factory were soon learned, while the wages in the factories were higher than those of agricultural labourers. In a short time, however, when a superabundance of hands had entered the trade, wages were reduced, and throughout the history of the factory system in Scotland the wages of the workers has never been high.

Before the end of the century the Scotch cotton manufacturers were producing a variety of goods. The production of muslin began in 1780, and in Paisley, shortly after, the manufacture of fancy cotton fabrics began. After the plain muslins came the mulls, nainsooks, ginghams, pullicates, and other varieties were rapidly turned out.

The first steam-engine for spinning cotton in Scotland was erected at Springfield, Glasgow, in January, 1792, by Messrs. Scott, Stevenson & Co. Mr. Robert Miller, of Glasgow, obtained a patent for a power-loom in 1796; and Mr. John Monteith, of Glasgow, adopted it, and erected a factory at Pollokshaws with 200 looms; and as the apparatus was improved in efficiency, its working power soon became great.

In 1820, there were 2000 power-looms in Scotland; in 1829, there were 10,000; and in 1833, there were upwards of 14,000. At the latter date there were 134 cotton mills in Scotland, and at this time the cotton manufacture was centred in Glasgow and the district around it. Out of the total number of mills in Scotland nearly 100 belonged to Glasgow. In 1838, there were upwards of 37,000 hand-loom weavers in the west of Scotland directly connected with cotton weaving.

According to a parliamentary return, there were 168 cotton factories in Scotland in 1850, and of these 94 were in Lanarkshire; in Renfrewshire, 51; in Ayrshire, 4; Dumbartonshire, 4; in Stirlingshire, 4; in Buteshire, 4; in Perthshire, 3; in Aberdeenshire, 2; and a few in other places. Thus Lanark and Renfrew had 145 cotton

factories, leaving only 23 in all the other cotton manufacturing districts of the kingdom. These two counties had 1,385,238 spindles and 20,788 power-looms. The total number of persons in Scotland then employed in this branch of manufacture was 36,322.

In 1861, the number of cotton factories had decreased to 163, but the number of hands had increased and also the quantity of steam-power. In that year there were 1,915,398 spindles and 30,110 power-looms in operation, and 41,237 persons were employed. The American War, however, between 1861 and 1866 seriously disturbed the cotton trade, and many of those employed in it suffered severely both in England and Scotland, as this country was largely dependent for the supply of raw material upon the Southern States. Some of the cotton factories are very large, and in Glasgow several of them employ from 1500 to nearly 2000 hands.

In 1871, the number of persons employed in the cotton manufacture was about 50,000, and of this number over 30,000 were females. In 1891 the number of hands was about 47,000. The several branches of this manufacture are the following:—1. Plain cotton goods, of which great quantities are produced. 2. Lace manufacture, in which 1,621 persons were employed, of whom 795 were females. 3. In embroidering muslin, 487 hands were engaged. 4. In the branches of calico printing, dyeing, and bleaching, 10,599 persons were employed, of whom 4,858 were females. 5. The manufacture of thread, which has been greatly developed.

In 1722 the manufacture of thread was introduced into Paisley; but it was on a small scale till the early part of this century, when cotton thread began to be largely manufactured, especially since about the middle of the century. Paisley is the chief centre of the thread manufacture. The thread works of Messrs. J. & P. Coats, Limited, occupy 40 acres of ground, and have been developed with remarkable skill, energy, and enterprise. All the appliances and machinery used in manufacturing the thread are of the most efficient description. There are six large boilers in a row at a short distance from each other, and the furnaces of these are fed with coal by a self-acting contrivance. The engine room is grand, with its powerful and beautiful engines, and the great motive wheel revolving at a surprising velocity. In a large one storey building the wood for making the spools or pirns is stored. The spools are manufactured thus:—The wood is sawn into suitable pieces of about four feet in length, each of these is put through a number of machines, the first

of which rounds the piece of wood, the second advances it another stage, and so on through the other machines till the spools are finished and ready for the thread. The raw cotton requires various preparatory processes, such as cleaning, combing, etc., then the prepared material is taken to a large mill of five or six storeys in height. When the steam is turned on, the material is worked through an elaborate combination of mechanism, the process of manufacture being advanced successively in each storey till the finished thread is turned out—wound on the pirns and ready for use. A vast quantity of thread is produced in the works. The Company gives employment to over 5,000 hands,—the greater number of whom are girls. There is a very complete set of fire brigade appliances which can be instantly put into operation in the event of a fire occurring in the works.

Messrs. Clark & Co.'s thread works in Paisley are also most extensive, and occupy 50 acres of ground on the banks of the Cart. There are several large mills, and ten engines which represent a total of 6,000 horse power. They employ 500 men and 3,500 girls. In Glasgow 1,100 are employed in the thread manufacture. The total number of hands engaged in this branch of industry in Scotland exceeds 12,000.

IV. The manufacture of silk gauze was commenced at Paisley in 1760, and from that date till about 1785 the silk gauze weaving trade was exceedingly prosperous in Scotland. At the latter date, in Paisley and the surrounding villages, 5000 looms were engaged on silk fabrics, and they produced goods of the annual value of £350,000. Although this branch has passed through many fluctuations, the manufacture of silk goods is still carried on in Paisley and Glasgow. In 1871, the number of persons employed in this industry was 2440, of whom 1256 were females. In 1875, there were four silk factories in Scotland. In 1891 there were nearly 4000 hands employed in it, mostly females.

V. There are many mixed textile fabrics produced, such as cotton and silk, wool and silk, cotton mixed with flax, and cotton with jute, and so on through all the varieties of fancy and coloured goods, down to the varied kinds and qualities of the cheap shoddy and mungo.

VI. Floorcloth is manufactured on a large scale at Kirkcaldy. The manufacture of this class of goods has recently attained a high degree of elaboration in Scotland. Thirty years ago, the firm of

Messrs. Nairn had gained a high reputation for their floorcloth. In 1871 about 250 persons were engaged in this manufacture, while in 1891 the number of persons employed was 1266.

In 1871, the entire number of persons employed in textile manufactures was nearly 200,000; and if we add those dependent upon them, the total number of persons directly dependent for their support on this department of factory labour would be about 350,000. In 1891 the number of hands was 205,550, of whom 133,217 were females.

The introduction of machinery and the power-loom, it is well known, entailed great and widespread suffering on the hand-loom weavers and those dependent upon them; and without dwelling upon this sad side of the subject, I may notice a few facts and circumstances connected with it. About the end of the eighteenth century and the early years of this century, the weavers in the west and south of Scotland were the best paid class of workers in the country. They had in general the character of being men of intelligence, and exercised considerable influence upon the public opinion of the country; many of them were keen and able politicians, notwithstanding the sneers of some of the Scotch judges of the period touching their intellectual capacities. They probably did more to advance political reform than has yet been recognised. But owing to the introduction of the power-loom, and various circumstances, from about the year 1816, their wages began and continued to fall; and before the second quarter of the century had run far they had fallen very low. When engaged in weaving certain qualities of cloth they could earn from 30s. to 32s. a week in 1806; in 1810 they were making 26s. a week; but in 1820 they had fallen to 10s. a week; and in 1830 to 5s. 6d. a week. To relieve their distress and suffering emigration on a large scale was applied, and many of them were forced to leave the home of their fathers.

"At the present day it can only be said that a remnant of the great wreck continues to ply the ancient calling in the scattered villages of the west, where in early days the sound of the shuttle was heard all day long in almost every cottage. According to a rough census, made in 1872, of the counties of Lanark, Renfrew, and Ayr, there were then about 10,000 hand-loom weavers either at work in their own houses or in shops belonging to manufacturers; but they were a steadily declining remnant. In 1875, working upon Paisley shawls, they could earn from 4s. to 5s. per day, but at shirting

and the common descriptions of work, which, however, are mostly left to women and boys, not more than 8s. a week could be earned, and that with the labour of twelve, fourteen, and sometimes even more, hours. Working practically beyond the range of factory inspectors' supervision, the hand-loom weavers not only labour long and irregular hours, but children of tender years, taken in as apprentices, have to ply the shuttle for equally hurtful and unconscionable periods." [30]

Thus the industrial revolution was not accomplished without incidentally causing much suffering; but there are a few other points which must be noticed before passing from this class of manufactories. Prior to the year 1834 children of all ages were employed in factories. But in the beginning of that year an act of parliament came into operation, which enacted that no person under eighteen years of age should be permitted to work in the night between half-past eight P.M. and half-past five A.M. in any factory in which steam or water power was used, except in lace factories. That no person under eighteen years of age should be employed more than twelve hours a day, nor more that sixty-nine in one week. That no child under nine years of age should be employed in factories, except in silk mills; and after the 1st of March, 1835, none should be employed under twelve years of age; and after the 1st of March, 1836, none under thirteen years of age. There are other important provisions in the interest of children in this act, such as those requiring that the younger children should be educated. The act, however, seems to have been unsatisfactory. Mr. Baines in his *History of the Cotton Manufacture* says: "All the inspectors declare that the clauses requiring the education of the younger children, and prohibiting those children from being worked more than 48 hours in the week—eight hours a-day—have only the effect of compelling the masters to discharge the children between nine and eleven years of age. If this act should continue in force, all children under twelve years of age would be discharged in March, 1835, and this would make it impossible in many cases to carry on the mills, as children above that age could not be had in sufficient numbers. The inspectors, therefore, state that the act must be amended in these respects, and there can be no doubt that this amendment will take place next session. It is

[30] *Notices of some of the Principal Manufactures of the West of Scotland*, p. 190. The above statement was written in 1875.

found impossible to compel the education of the children, and the attempt to do it has only produced hardship to them and their parents, from the number who have lost their employment. The Commissioners had hoped that the manufacturers might obtain relays of children, each set working not more than eight hours a-day, whilst those above thirteen years of age worked twelve hours. But neither can the children be obtained, nor will the masters submit to the inconvenience caused by the change of hands." [31]

By subsequent acts of Parliament the employment of children in factories has been entirely prohibited, and the hours of labour for adults has been shortened more than two hours per day in factories. Concerning the employment of children, the change which the factory acts have introduced was greatly needed, both on the grounds of humanity and considerations of physical vigour and health, as well as moral and mental education ; for seventy-eight hours' labour a-week for a child under ten years of age is nothing short of actual cruelty.

The operatives in textile factories were not highly paid for their labour in Scotland ; and, although this is true generally, in the early stages of the cotton manufacture, and in certain branches, there were some exceptions. Glasgow may be taken as representing an average of the highest wages paid to workers in cotton factories. In 1833 the weekly wages of this class were as follows :—1. Boys under eleven years of age, 1s. 11¾d. ; girls under this age, 1s. 10½d. 2. Boys from eleven years of age to sixteen, 4s. 7d. ; girls of the same age, 3s. 8¾d. 3. The wages of men ranged from 18s. to 19s. ; and those of women about 6s. 8d., but some of those who worked on piece-work made high wages. Men at wheels, containing from 252 to 300 spindles, earned 4s. 6d. a-day ; women engaged as reelers and winders, from 1s. 4d. to 1s. 2d. a-day. Youths and girls from fourteen to seventeen years of age, employed in the preparing room, or as piercers to the spinners, earned 1s. 4d. a-day ; boys and girls from ten to fourteen years of age, employed in the same kind of work, made from 10d. to 8d. a-day ; children under ten years of age earned from 5d. to 4d. a-day. Youths and girls at wheels of from 120 to 180 spindles made from 3s. to 2s. a-day.

In 1867 the weekly wages of the cotton operatives in Glasgow were these :—Men, overlookers, 45s. ; warpers, 22s. ; drawers and twisters, 20s. ; dressers, 33s. ; sizers, 35s. Women, reelers and winders, 9s.

[31] *History of the Cotton Manufacture*, pp. 479-480.

to 10s. 6d.; warpers, 14s.; weavers, taking charge of two or three looms, 11s.; of four looms, 15s. 6d. Girls, taking charge of one loom, 6s. So much for textile manufactures.

Section VII.

Paper Manufacture.

In a preceding volume an account was given of the attempts made in the seventeenth century to establish the manufacture of paper in Scotland ;[32] and I will narrate briefly the establishment and development of this manufacture through the eighteenth century onward to the present time. The appliances used by the early paper-makers were of the simplest kind in preparing the pulp and making the paper by the hand. The application of machinery to this manufacture is of comparatively recent date ; and the process of preparing the rags and the pulp was a very slow one. The pulping engine was invented about the middle of the eighteenth century, and its introduction superseded the process of fermenting the rags and bruising them in a mortar.

The paper-making machine was invented about the end of the last century, and is one of the most ingenious contrivances employed in the arts. It has been brought to surprising perfection in the present century. Very complete paper-making machines have been made, in Edinburgh, by Mr. George Bertram, Sciennes, and Messrs. James Bertram & Son, Leith Walk. A machine, exhibited by Mr. George Bertram at the Exhibition of 1862 was much admired, as the most perfect paper-making machine which had, up to that time, been produced.

The chief centres of the paper manufacture are in the counties of Edinburgh, Lanark, and Aberdeen. In 1709 Mr. Anderson built a paper mill at Valleyfield, Penicuik, which is still in operation ; and by gradual extensions it has become one of the largest in the county of Edinburgh. But the manufacture for a long time made little progress. In 1763 there were three paper mills in the vicinity of Edinburgh, and the quantity of paper then produced was 6400 reams a-year. In 1773 there were twelve paper mills in this district, and the annual production had risen to 100,000 reams. At this time a

[32] Mackintosh's *History of Civilisation in Scotland,* Vol. III., pp. 317-19.

considerable quantity of printing paper was exported to London; but in the early stages of paper-making in Scotland the business was not very remunerative.

The Messrs. Alexander Cowan & Sons are amongst the oldest paper manufacturers in Scotland. They have three mills at Penicuik, in the county of Edinburgh, which are near each other, and worked as one establishment. The Valleyfield Mill, which is the central and the largest one, was begun, as already observed, by Mr. Anderson in 1709, and in 1779 Mr. Charles Cowan bought this mill. But in the years 1810 to 1814 it was used by the Government as a place of confinement for French prisoners of war. In 1803 this firm purchased a corn mill, which was converted into a paper mill, and it is now known as the Bank Mill; in 1815 they also bought a paper mill belonging to Mr. Nimmo of Edinburgh, in the same neighbourhood, which was called the Low Mill. Before the year 1815, the number of hands employed by the firm was about thirty, who worked by the hand process, and produced from two to three tons of paper a-week. Shortly after the close of the French war, they repurchased the Valleyfield Mill from the Government, fitted it up anew with the most improved appliances, and restarted it in 1821. The operations of the firm have been carried on with marked energy and judgment; and besides their three mills, they have an establishment at Musselburgh, in which the esparto used is reduced to pulp, and another one at Leith, in which the rags are sorted and cut.

The water-wheels and steam-engines employed in these mills are equal to about 200 horse-power. In 1870 they had five machines in operation, and were producing from 2000 to 3000 tons of paper annually, all of which were of the finer kinds of writing and printing papers.

In 1870, about 600 persons were employed in the various departments of the works, and upwards of £1200 a-month was paid in wages, at the following rates:—Mechanics, 25s. a-week; millworkers, men and lads, 18s. to 19s.; women, from 8s. to 10s. The mills were then under the Factory Acts. But in 1841, the following rules were enacted by the heads of the firm:—"1. No child under thirteen years of age shall be employed. 2. No young persons shall be employed before they are able to read, write, and figure, and, in the case of girls, to sew. 3. Wives shall not be employed, as it is considered that they should be keepers at home, for the sake of their husbands and children."

The most extensive manufacturers of writing paper in Scotland, and indeed in the world, are the Messrs. Alexander Pirie & Sons, Aberdeen. This great establishment was begun on a small scale about the middle of the eighteenth century; and the works have been gradually extended, chiefly in the present century. The works at Stoneywood now cover upwards of sixteen acres of ground; and the locality where they stand—the south bank of the river Don—is well adapted for this department of manufacture, as there is a plentiful supply of water, a prime requisite in the process of paper-making.

In these works there are in all six paper machines of great width; and these, along with the necessary washing and beating engines, as well as all the machinery required for the finishing processes, are driven by water and steam power combined, about 2000 horse-power being constantly required. Here, and in all the works of the firm, the best machinery, the most efficient appliances, and the most refined chemical processes, are brought into full operation. In many instances the proprietors have been the inventors of the most efficient appliances themselves. In short, this large manufactory has been developed with great judgment, energy, and surpassing skill; hence its success and world-wide reputation.

Some idea may be formed of the rapid development of these works from a comparison of the quantity of raw material used annually at different periods. In 1848, the quantity of rags used was from 600 to 700 tons yearly, but at that date the mills were improved, and the premises extended. So in 1859, the raw material annually used had reached 2500 tons; while in 1879, it had risen to 6000 tons annually. At the present time, upwards of 8000 tons of raw material is used annually; and the quantity of paper produced exceeds 6000 tons, or over 750,000 reams per annum.

Besides the extensive works at Stoneywood, the firm since 1857 have had mills at Woodside, in which the rags are sorted, classified, and then stored, and sent to Stoneywood works when required for the boiling process. Upwards of 200 persons are employed in the rag establishment at Woodside.

At the Union Works in Aberdeen, which the firm have long devoted to the manufacture of envelopes, there are over 700 hands employed. The rate of production reaches to about 13,000,000 envelopes per week, or over 2,000,000 a-day.

In consequence of the introduction, especially in recent years, of labour-saving machinery, although the output of the works has been

nearly doubled, the amount of hand labour has somewhat decreased. The combined works of the firm still constantly employ upwards of 2500 hands.

The firm produces a great variety of fine writing papers, and also the best classes of printing papers. Besides these leading lines of high-class papers, they make many specialities. Their mills produce the widest range of qualities, from the hardest and best qualities of account book paper to the softest and most absorbent blotting papers. They also make various kinds of card-board, enamelled cards and papers. In a word, the papers of the firm are known and valued throughout the world.

There are other four paper mills in Aberdeenshire. The Muggiemoss Paper Mills, belonging to Messrs. Davidson & Co., which were established in 1796. These works have also been developed from a small beginning; and the firm, aided by its managers, have originated and adopted many improvements in the appliances. At these works various kinds of wrapping papers and paper bags are produced; and they also manufacture a special kind of roofing felt. The firm employs from 500 to 600 hands.

The Culter Paper Works stand on the banks of Culter Burn, in the valley of the Dee. In 1750 Bartholomew Smith erected a mill and commenced the manufacture of paper. He was succeeded by Richard Smith and Lewis Smith. For a long time the works were on a small scale, only six men were employed toward the end of the last century. In 1820 the works were acquired by Alexander Irvine, and carried on under the title of Irvine & Company till 1837, when the mills were purchased by Messrs. Arbuthnot & M'Combie. In 1840, the machinery was driven by two large water wheels; and sixty hands were employed at the works. The papers then produced in the works were browns, cartridges, and all kinds of wrapping papers. In 1856 the Messrs. Pirie of Stoneywood purchased the mills; but, in 1865 they sold them to the Culter Mills Paper Company. The production was then about 15 tons of paper per week. Since then the works have been greatly extended, new machinery and improved appliances requisite for the various processes of the manufactures have been introduced; the weekly produce of paper is now over 60 tons, or 3,220 tons per annum. The motive power for the machinery is mainly supplied by steam engines, but also partly by water, which make a total of over 1000 horse power. There are two paper-making machines, each 72 inches wide, a number of cutting, burnish-

ing, super-calendering, and folding machines, etc. The electric light is fitted into the principal rooms. The works are built of granite, and occupy a large space of ground. The railway siding runs into and through the mill, round the building, through the grass sheds and dust house, passing close to the steam boilers, and thus coal can be tipped from the trucks. The manufactures produced in the works consist of various styles of the finest writing papers, excellent printing papers, and a variety of other classes of papers. The products of the company have attained a high reputation in the markets of the world. About four hundred hands are employed in the works.

The Inverurie Paper mills were begun about sixty years ago by Mr. Tait, and are now carried on by his sons. They produce various kinds of printing papers, and a considerable quantity of paperhangings.

Gordon's Mills, Aberdeen, were commenced in 1888, and were recently acquired by the Donside Paper Company. In these works various qualities of printing papers are produced.

In 1870, there were fifty-seven paper mills in Scotland, of which twenty-two were in the county of Edinburgh, nine in Lanarkshire, and the rest distributed over eleven counties. There were then eighty paper-making machines employed in Scotland, and about 10,000 persons directly engaged in the manufacture. In 1888 there were sixty paper mills in Scotland, worked by fifty-six firms; and the number of paper-making machines employed had increased to 101. In 1891 there were 11,879 hands employed in the manufacture; while the number of paper-making machines had also increased.

In the development of paper manufacture, much difficulty has been experienced in finding the requisite raw material in sufficient quantity, and great ingenuity has been exerted in efforts to find suitable materials and substances to meet the requirements of manufacturers. Although many fibres, such as esparto grass, bamboo, jute, wood, sugar-cane, etc., have been successfully treated so as to suit for papers of an inferior description, nothing has as yet been discovered to supersede the use of linen and cotton rags for making the finer qualities of writing paper.

The manufacture of paperhangings only commenced in Scotland at a comparatively recent period, and was conducted on a small scale. In 1870, there were six firms engaged in it, but only one of them had a large business; at that date there were about 500 persons employed in this branch of paper manufacture, but since then it has been further developed.

About 1857, Messrs. Wylie & Lochhead, a firm in Glasgow, began paper-staining on a small scale, and limited themselves to block printing; but after the abolition of the paper duty in 1861, they built a large factory at Whiteinch, and introduced cylinder printing machines. About 300 persons were employed, and 80,000 pieces of paperhangings were produced every week. The more costly papers are produced by the block printing, and the cheaper varieties by the machines.

This firm have devoted special attention to the production of paper-hangings of the highest class, and they have carried the art of making gold, stamped, bronzed, and flocked papers to a high degree of perfection. The designing of paper-hangings affords ample scope for the exercise of artistic skill, and a large staff of designers and engravers are employed by Messrs. Wylie & Lochhead.[33]

Section VIII.

Printing, and Bookbinding.

In the preceding volumes, the introduction and progress of printing in Scotland was noticed;[34] and some notice of its modern development seems requisite. The quantity of printing executed in Scotland prior to the eighteenth century was not large, and consisted for the most part of ballads, poetry, pamphlets, sermons, and a few other works. The first work printed in Glasgow was the protestation of the General Assembly of the Church of Scotland, and of the nobility, burghs, ministers, and commons, "subscribers of the Covenant, lately renewed, made in the High Kirk, and at the Market Cross of Glasgow, the 28th of November, 1638. Printed at Glasgow, by George Anderson, in the year of grace 1638."[35] But Glasgow was among the first places which attained a reputation for printing in Scotland. The two brothers, Robert and Andrew Foulis, were cultured and accomplished men. Both were educated in the University of Glasgow; and in 1742, Robert commenced business as a printer and bookseller in Glasgow. In 1743, he was appointed printer to the University, and was accommodated with premises within the

[33] *Industries of Scotland*, by D. Bremner.

[34] Mackintosh's *History of Civilisation in Scotland*, Vol. II., pp. 299-303; Vol. III., p. 363.

[35] Macgregor's *History of Glasgow*, p. 211.

College buildings. Andrew joined the business; and they printed a series of classical books in a style far superior to any before executed in Scotland. They were not only the foremost printers of their day, but they also did much to promote the culture of painting and art.

In 1780, there were twenty-seven printing offices in Edinburgh. Although stereotyping was invented early in the eighteenth century, by William Ged, a goldsmith in Edinburgh, and practised by him in 1730, it was long before this art was brought into use in printing establishments. In the present century the process has been brought to great perfection, and has for many years been universally practised. In short, it may be truly said that the great development of the modern newspaper press, and the incessantly increasing necessity for expeditious work, has tended greatly to the invention of new machinery, and the improvement of the whole apparatus and appliances now in operation in large printing establishments.

It was in connection with newspapers that the printing machines were first actually worked, and steam-power applied to printing. After a long series of trials and experiments, and the exercise of much ingenuity, the printing machines were brought to a high degree of efficiency. They began to be used in Britain in the first quarter of this century, and were perfected by degrees. The *London Times* was first printed by a machine on the 28th of November, 1814. There are now various kinds of machines used for printing newspapers from stereotyped plates placed on revolving cylinders, which can print many thousands of copies per hour. The "Victory" printing machine, used in many large newspaper establishments, is an admirably perfect piece of mechanism. This machine, on being set in motion, feeds itself from a large roll of paper, and throws off the printed copies at a surprisingly rapid rate, neatly folded and ready to be despatched.

The stereotyping process itself has been much improved and perfected during the past forty years. Indeed, it has become so indispensable that the daily newspapers circulated throughout the country could not be produced without its aid. In short, there has been a complete revolution in the modes of printing within the past hundred years.

In all the large printing establishments in Scotland machinery and steam-power are employed. Many kinds of printing machines are now used, each specially adapted for different kinds and classes of

work. In some establishments all kinds of printing is executed; others limit themselves chiefly to special lines, such as book-printing; while some carry on both printing and lithography; most of the book-printing firms execute stereotyping. Edinburgh is the chief centre of the book-printing trade in Scotland, though this branch is carried on more or less in all the chief towns of the country.

A large quantity of excellent printing is annually executed in Scotland. In illustrated works ample scope is afforded for the display of taste and artistic skill, and good specimens of this branch of work have been produced in this country.

According to the census of 1871, there were 5609 printers in Scotland. But including all the branches of business directly connected with the printing trade, there were upwards of 16,000 persons employed. In 1891, 12,329 persons were so employed.

In the bookbinding trade machines are used for performing a great number of operations. Many attempts have been made to supersede hand-labour in folding by machines, and in the common kinds of work such machines are used. In every large bookbinding establishment the division of labour is carried out to the minutest particular: for instance, the case-makers are divided into six or eight sections, each performing a special part of the work, and before a book is bound it passes through eighteen or twenty different hands.

This department of work also affords considerable scope for the exercise of taste and skill in selecting the various colours of cloth, forming devices for the boards, and details of ornamental work. The styles of binding are endless, and many beautiful specimens are produced in Scotland. In 1871, there were 3113 persons employed in this branch of industry, of whom 1820 were females. In 1891, there were 4,405 hands employed in it, of whom 2,888 were females.

Section IX.

Leather, India-Rubber, and Shoe Manufactures.

In a preceding volume the tanning of leather was noticed, and the shoemaking trade was frequently mentioned;[36] but the manufactures in india-rubber are a more modern development, nevertheless, it seems requisite to give some account of them.

[36] Mackintosh's *History of Civilisation in Scotland*, Vol. I., pp. 241, 400, Vol. II., p. 293; Vol. III., pp. 287, 305.

The manufacture of leather was long subjected to a duty, which was finally repealed in 1830. In the latter half of the last century there was a considerable leather trade in Scotland; and until about twenty-five years ago the manufacture of leather was increasing, but since the trade has not been so prosperous. The best and most durable kinds of boot and shoe leather were not at any time produced in Scotland; the quality of this class of Scotch leather is inferior to both the English and the French. In 1871, there were about 120 tanneries; and at this time there were 2739 persons employed in connection with the leather manufacture in Scotland. In 1891, about 3000 hands were employed in it.

Within a period of forty years the boot and shoe making trade has undergone a complete revolution; before 1859, boots and shoes were made by the hand, and with few exceptions they were all sewed. But since then machinery has been largely applied to the manufacture of boots and shoes, and sewing by the hand has been almost superseded by riveting machines and sewing machines. One result of the application of machinery has been the establishment of large manufactories of boots and shoes. One of these in Glasgow, in 1870, employed 2000 hands; and in other large towns many shoe factories have been started within the last twenty-five years. The articles produced in these factories are much inferior, both in quality of material and in workmanship, to those which were formerly made by the hand; but the factory article has the recommendation of cheapness, and this is what the majority of dealers and customers are always in quest of.

Gutta-percha in its raw state is a substance extracted from certain trees which grow in Asia, and the manufacture of it in this country is of recent date. From about 1858 onward, it was largely used in making boots and shoes in Scotland: the soles were of gutta-percha and the uppers of leather. It has been applied to many other purposes; and as a non-conductor of electricity it has become an invaluable aid in constructing the submarine telegraph.

In 1871, the number of persons employed in making boots and shoes was 37,587, and of this number 13,426 were females, but 12,207 of the latter were shoemakers' wives who worked at the trade.

The manufactures in india-rubber are of comparatively recent origin, and up till about 1820, it was only used for rubbing out pencil marks. The raw material of caoutchouc, or india-rubber, is a resinous substance, which exudes by incisions from trees that grow in Brazil,

in Cayenne, and Quito ; and it was first brought to Europe (France) about the year 1734. The first notice of it in Britain occurs in a publication of Dr. Priestley's in 1770. In 1819, Mr. Hancock began his experiments on india-rubber, and the following year he obtained a patent for india-rubber braces, garters, bands, etc. He continued his operations, and before 1847, he had obtained fourteen patents for his special india-rubber goods.

In 1820, Mr. Macintosh, of Glasgow, began to make experiments with india-rubber ; and in 1823, he established a work in Glasgow for waterproof articles. In 1824, he took out a patent for water-proofing cloth, which was afterwards distinguished by his name. This cloth was made by cementing two folds together by the solution, and coats made of it soon became well known. He formed a partnership in Manchester, and commenced to manufacture waterproof goods on a large scale, and the firm became widely known. Mr. Hancock had worked some of his inventions in connection with Mr. Macintosh, and finally entered the firm, which then assumed the title of Messrs. Hancock & Macintosh.

After the manufacture of useful india-rubber goods was demonstrated by the efforts, talents, and enterprise of the two gentlemen mentioned above, there was a wild rush of attempts at india-rubber manufactures. "Mechanicians hailed the rubber as a sort of missing link in their code of materials for machine making ; and such was the rage for introducing it, that it was frequently found in most unsuitable positions." It is now used in connection with many machines ; indeed, the purposes to which it is applied, as well as the different kinds of goods and articles manufactured from it, are exceedingly numerous and varied, and a complete detail of them would be out of the question—only a few can be mentioned.

Boots and shoes of all sizes have long been manufactured from india-rubber. One of the earliest specimens of this class of goods was known under the name of "goloshes," which were worn as overshoes, and were in great vogue thirty years ago. About that time there was an india-rubber manufactory in Edinburgh which could turn out 7000 pairs of boots and shoes a-day, or over 2,000,000 pairs a-year.[46] Coats, leggings, cushions, bags, and so on were at the same period produced in endless variety. A little later, combs, jewellery, and a long series of miscellaneous articles were produced from india-rubber.

[46] In recent years this class of boots and shoes have fallen out of fashion.

The vulcanite and black jet jewellery was popular twenty years ago, and immense quantities of it were produced. At present a large business is done in india-rubber and vulcanised goods in Scotland.

Section X.

Sugar Refining, Brewing, and Distilling.

I. Sugar works were established in Scotland in 1667.[37] In 1715, the sugar-refining trade was carried on in Glasgow and Leith; and at this date it was put under the English excise laws. Before the end of the eighteenth century Greenock had become the chief seat of the sugar-refining trade in Scotland. The first sugar refinery in Greenock was commenced in 1765, by a company of West Indian merchants; this refinery was in operation in 1870. The second refinery in the town was begun in 1787; it started with two pans, but the number was subsequently increased. The third sugar refinery was built in 1800; the fourth was erected in 1809; the fifth in 1812; and the sixth im 1826. The sugar refining trade continued to increase in Greenock, and more refineries were erected. In 1869, there were fourteen sugar refineries in this enterprising town; and two of the largest of these turned out about 14,000 tons of sugar a-week.

In 1869, there were twenty sugar refineries in Scotland, eighteen of which were on the Clyde and two at Leith. It thus appears that nearly all the sugar refining in Scotland was centred on the Clyde. A large amount of shipping was employed in the sugar trade. In 1868, 416 vessels arrived in the Clyde, of about 140,000 tons, and 400 of these discharged their cargoes at Greenock. The raw sugar imported into the Clyde in 1858 was 56,769 tons, and 15,000 tons of molasses; in 1861, the raw sugar imported was 88,694 tons, and molasses 18,229 tons; and in 1867, the sugar was 178,000 tons, and 2900 tons of molasses. But, since the duty on sugar was abolished, the annual consumption has increased; a larger quantity of it is used in making preserved fruits of every kind.

In the sugar-refining process very heavy machinery and costly appliances are required, such as blowing-up machinery, filtering apparatus, vacuum pans and vacuum pumps, heaters and stirring

[37] Mackintosh's *History of Civilisation*, Vol. III., p. 330.

apparatus, charcoal kilns, centrifugals, and the like. But the machinery and apparatus which are used in sugar-making in the countries where the sugar-cane itself grows are of a much heavier description; indeed the weight, size, and power of the machinery, pans and batteries, engines and varied appliances, in operation in the sugar mills are very great. In Glasgow there are a number of iron-founding and engineering firms who devote special attention to the production of sugar-making machinery, and very large consignments are annually exported to the sugar plantations. It has been calculated that in the years 1872 to 1876 the machinery of this kind exported direct from the Clyde to the British Colonies and other sugar-growing countries was valued at upwards of £400,000 per annum.

In 1871, there were about 1000 persons employed as sugar refiners in Scotland. In 1891 there were 1187 sugar refiners.

II.—In the preceding volumes I have shown that brewing was from an early period a staple branch of the domestic economy of the nation, and noticed many of the regulations, both national and local, relating to the making and sale of malt, ale, and whisky; so any lengthy detail is superfluous. It is well known that the increased tax on malt imposed by the Government in the eighteenth century, was with difficulty enforced even among the licensed brewers and malt sellers, and that smuggling and illicit distilling prevailed to a large extent until the first quarter of this century.

At the beginning of the eighteenth century considerable quantities of ale and beer were exported to the Continent; and from then onward the export trade has continued to extend. In the last century brewers were comparatively more numerous than now, and the concentration of production in certain localities, and in large establishments, which is a characteristic of the period, also took place in the brewing and distilling trade. In 1835, there were 640 licensed brewers of beer in Scotland; but in 1863, there were only 225; and in 1866, 217. In 1836, the brewers consumed 1,137,176 bushels of malt; in 1863, 1,780,919 bushels; and in 1866, 2,499,019 bushels. The exports of ale and beer in 1863 amounted to 47,415 barrels, the declared value of which was £172,140; in 1866, the quantity exported was 61,723 barrels, valued at £230,109. Amongst the places to which this beer was sent were—Queensland, New South Wales, East Indies, West Indies, North America, and other quarters of the globe.

Recently, various kinds of cheap beverages have been brought into use, such as aerated waters, of which very large quantities are consumed.

III.—Concerning whisky, the Government of Scotland began to legislate about its use and sale in the sixteenth century; and our Governments have continued to legislate upon it as they began—on inconsistent and often unjust lines, which may be partly accounted for on the ground that for centuries it has been made a source of an enormous revenue. This, however, is not the place to discuss the drink traffic laws, and I proceed to other sides of the subject.

In 1708, 50,844 gallons of spirits were produced in Scotland; and in 1756, there were 433,811 gallons; but at this time the duty was increased, which caused a fall off in the production. Shortly after a demand for Scotch spirits arose in England, and large quantities were sent across the border. An import duty of 2s. 6d. a gallon was imposed in England, which was quickly followed by a system of smuggling; and it was recorded that in 1787 upwards of 300,000 gallons of whisky was conveyed across the border without the cognisance of the Excise. A new mode of charging the duty on spirits was tried in 1786—a license duty calculated upon the capacity of the stills; but the distillers soon altered the form of the stills, and increased the rate of production. When the Government discovered this, the amount of the license was raised year by year till, in 1798, it amounted to £64 16s. 4d. per gallon of still capacity in the Lowlands, and to £3 per gallon in the Highlands. The mode of charging the duty was again changed, and from the beginning of the year 1799 a duty of 4s. 10¼d. was put on each gallon of spirits produced for home consumption. At this time there were 87 licensed distillers in Scotland; but they did not approve of the change, and many of them gave up business, so the annual amount of the duty fell off for a year or two. In 1802, however, the Government reduced the duty to 3s. 10½d. per gallon; and in 1803, there were 88 distillers who paid a duty of £2,022,409. The next year the duty was raised, and the number of distillers decreased till, in 1813, there was only 24. At this time the duty per gallon was 9s. 4¼d. In 1823, the duty was lowered to 2s. 4¾d. per gallon; and then the number of distillers greatly increased, and the revenue rose accordingly. In 1833, the rate of duty was 3s. 4d. a gallon, and there were then 243 distillers, who paid duty to the amount of £5,988,556.

In 1840, the duty was 3s. 8d., the number of distillers 205, and

the quantity of whisky produced this year was 9,032,353 gallons. The same year, the quantity of spirits charged with duty as consumed in Scotland was 6,007,631 gallons. In 1855, the quantity of whisky produced was 11,283,636 gallons. In 1867, there were 111 distillers in Scotland, and the quantity of whisky produced was 10,813,996 gallons. The same year the quantity of spirits charged with duty as consumed in Scotland was 4,983,009 gallons.

In 1871, the number of persons employed as brewers, maltmen, and distillers in Scotland was 2869—a very small number of hands compared with the enormous overturn of capital, plant and stock, employed in the business. In 1891 the number of persons employed was 4343.

Concerning distilling apparatus, it may be of interest to state that, in 1862, Mr. George Russell, of Glasgow, patented an apparatus for distilling fresh water on board ship at sea. This apparatus and others recently constructed have been very effective in producing fresh water at sea, which during long voyages is exceedingly useful.

Section XI.

Miscellaneous Manufactures.

The manufacture of soap was commenced in Scotland about the middle of the seventeenth century, and it has been carried on in Glasgow and other towns for upwards of two centuries; but great improvements have been made in the processes of this manufacture since the later part of the last century. It was shown in a preceding chapter of this volume, that the science of chemistry was ably taught by Cullen and Black, in Glasgow and Edinburgh, from the middle of the last century onward; and the results of this soon began to appear in the improvement of those useful arts and manufactures in which the application of efficient apparatus and appliances to the varied processes so much depends on a thorough knowledge of chemical science. Not only have the processes of the then existing arts and industries been greatly improved, but new arts and manufactures have been created, and numerous varieties of articles and goods have been manufactured in millions, tens of millions, and thousands of millions, from substances, the very names of which were unknown in Britain a hundred years ago, such as india-rubber

and gutta-percha. The whole class of what may be termed the chemical arts have been advanced amazingly in the present century.

I.—The alkali works at St. Rollox, in Glasgow, belonging to Messrs. Tennant & Co., were begun about the end of the last century; and at first they only occupied about three acres of ground, but they have been rapidly extended. In 1875, the works covered fifty acres, and eighty acres more were occupied with deposits, etc.; and 1200 men were employed in the establishment. The original leaden chambers were 6 to 8 feet square. The present chambers are 80 to 200 feet long, 20 feet wide, and 21 feet high, with a total capacity of about 1,500,000 cubic feet. The sulphuric acid for sale is rectified in glass retorts, but for the most part in two platinum stills, which are about 3 feet in diameter, and worth £2300 each, and rectify 13 tons per day. The plant, including the branch works of the Company at Hebburn, Newcastle, can produce 20,000 tons of bleaching powder, besides all the collateral and subsidiary products. The total raw material consumed annually at St. Rollox, amounts to about 80,000 tons. In addition to the regular manufactures, there are numerous other operations carried on in the works. Among these there are gas and brick making, and iron casting, the foundry being able of casting 300 tons a-week. Employment is also given to coopers, joiners, cart and waggon wrights, blacksmiths, tinsmiths, plumbers, engineers, and other mechanics. For the different operations 110,000 tons of coal are consumed per annum, and the numerous furnaces are in connection with 22 chimneys, ranging from 60 to 455½ feet high. The chief chimney, both from its magnitude and from its elevated position, is seen for many miles round Glasgow.

The products of the works are soda-ash, soda-crystals, caustic soda, sulphuric and hydrochloric acids, bleaching powder, soap, recovered sulphur, and recovered carbonate and peroxide of manganese.[38] In 1891, there were 2,674 persons engaged in alkali manufacture, of whom 429 were females.

There are several soap-works in Glasgow which produce the common kinds of soap, and also a variety of fancy soaps and blue-mottled soap. At the works of Kinning Park, Glasgow, special soaps are made for calico-printers, Turkey-red dyers, tweed and woollen finishers, scourers, bleachers, dyers, and for many other purposes. There

[38] *Notices of some of the Principal Manufactures of the West of Scotland*, pp. 222-224.

are soap-works in other towns throughout the country. Soap is largely manufactured in Aberdeen, in which there are two soap-works. The works of Messrs. Ogston & Sons are extensive, and produce a large quantity of soap.

In 1871, the number of persons employed in the manufacture of soap in Scotland was 434, of whom 32 were females. Down to 1833, a duty was charged on hard soap. In 1891 there were about 600 employed in this manufacture.

II.—There are extensive alum-works in Glasgow, and in the neighbourhood of Paisley. Near both of these places there is found in connection with the coal a black slaty rock or shale which contains bituminous matter and iron pyrites spread through it; and this shale is largely used in the manufacture of alum. Alum itself is largely used in calico-printing and dyeing, in the tanning of leather, in the finishing of paper, and for many other purposes.

III.—The manufacture of mineral oils was started in Scotland in 1851, by the late Dr. Young, of Durris, who, in company with Mr. Meldrum and Mr. Binney, erected paraffin oil works near Bathgate. Afterwards a number of mineral oil works were started. Dr. Young formed a new company under the title of Young's Paraffin Light and Mineral Oil Company, which is still carried on. In 1871, there were about 3000 persons employed in the Scotch mineral oil works. In recent years the mineral oil trade has been in a depressed state, and in 1891, the number of hands employed in it were 2,474.

IV.—The preparation of artificial manures is carried on to a considerable extent in Scotland; and also the manufacture of several kinds of food for animals.

V.—The manufacture of combs is carried on to a considerable extent. Aberdeen is the chief seat of this industry, in which there are two comb works.

In 1830 Mr. John Stewart and Mr. Joseph Rowell commenced to manufacture combs in Mealmarket Lane, Aberdeen, under the name of Stewart, Rowell & Co. Both men had excellent business abilities, and their united efforts led to signal success. In 1835 the firm removed to larger premises in Hutcheon Street, where the works were admirably managed, and the business developed with rare commercial tact, energy, and enterprise. This firm by the introduction of machinery succeeded in producing an unprecedented quantity of goods at prices which soon commanded the markets of the world. From time to time the works have been extended, and now occupy a

large space of ground. Many different appliances and machines are used in preparing the materials, and in the various operations of making and finishing the numerous varieties of goods produced. These operations all proceed on a systematic method, and evince a fine combination of mechanism.

The goods manufactured in the works consist of every variety of combs, of which great quantities are produced; and a number of other useful and fancy articles. The firm employs about 850 hands. John Stewart died on the 25th of January, 1887, and was succeeded by his eldest son, David, the present head of the firm, and ex-Lord Provost of Aberdeen.

In 1871, the number of persons employed in the manufacture of combs in Scotland was 1061, of whom 199 were females. In 1891 there were 1150 hands employed in this industry.

Concerning the important industry of the fisheries, in 1871 there were 26,267 fishermen and 1029 fisherwomen in Scotland. In 1891 there were over 30,000 persons employed in fishing.

In conclusion, the rise and progress of the coal and iron mining were narrated; the erection of ironworks and the development of iron manufactures were explained. An account was then given of the improvement of the means of communication. The progress of shipping and shipbuilding was indicated; the introduction of steam vessels, the change from wood to iron and steel shipbuilding, were explained. The manufacture of glass and the erection of earthenware works were noticed. The development of the several branches of textile manufactures were treated at length. The erection of paper works and the development of paper manufactures were described; and the progress of printing through the introduction of steam-power, machinery, and stereotyping was explained. The leather trade, and the introduction of machinery in boot and shoe making were noticed; the origin and development of several new manufactures were observed. Sugar-refining, brewing, and distilling were treated; and various chemical manufactures were briefly touched on.

CHAPTER XLIX.

Architecture, and Monumental Art.

Section I.

Architecture.

THE aim of this chapter is similar to several of the preceding ones: it is not a detailed history of architecture, but an effort to indicate briefly the changes which have taken place in the structure, and the external aspect of the chief cities of Scotland within a comparatively recent period. It will, in the first place, touch on the various kinds of stones used in building; in the second, a few brief notices of Scottish architects will be presented; and third, touch on the reconstruction of the chief cities and their present aspect.

At the outset it may be observed that, in the strata of rocks which exist in Britain, a pretty wide range of different kinds of stone are found. The quarries, both of England and Scotland, afford in abundance the well-known generic varieties of—(1) sandstone or freestone; (2) limestone; (3) granite. Marble of various colours is also found in Britain, although less common than the other classes of stones. In Scotland, marble is found in Tiree, Iona, Skye, Blairgowrie, and several other places. The early buildings and houses in this country were built of freestone, limestone, and other kinds of stones; granite was little used for building purposes till a recent period.[1]

[1] The granite districts of England are in Cornwall and Devonshire, the Channel Islands, Mount Sorel, and in some other places. The Devon and Cornwall granite is of several varieties; at Dartmoor it has a greyish hue.

"But harder granite must be sought for than Devonshire or Cornwall produces, where the construction is of importance; for the masses in these counties are mostly in a condition of rapid disintegration and decay, which seems chiefly attributable to their containing a large portion of potass. The Naval Hospital of Plymouth is built of granite whose parts appear to have been well selected. It was erected seventy years ago, and, except in the columns of the colonnades, does not exhibit symptoms of decay. In these, on their more exposed sides, the disintegration of the felspar has commenced, and lichens have already attached their roots to some parts of the surfaces."—Gwilt's *Encyclopædia of Architecture*, p. 479.

The chief varieties of Scotch granite are those of Craignair and Creetown, in Kirkcudbrightshire, those of Aberdeenshire, the Isle of Mull, and other kinds.

There is little information of the architects or builders of any branch of Scotch architecture before the eighteenth century; although in the national records the names of certain persons occasionally occur with the title of master of works, and master mason. Colin Campbell attained distinction as an architect. He designed Mereworth House, in Kent; Wanstead House, in Essex, built in 1715, which was much admired; and many other mansions. In 1725 he was appointed architect to the Prince of Wales; and in the following year he was appointed Surveyor of Works at Greenwich Hospital. He edited the first three volumes of *Vitruvius Britannica*, which appeared in 1713-25, and contained a considerable number of his own designs. He died in 1734.

William Adam, of Marybury, was born at Kinross in 1689. He succeeded Sir William Bruce as Surveyor of the King's works in Scotland. He carried out many important works, consisting of public buildings, bridges, and mansions. He collected and published his designs, with those of other contemporaries, under the title of *Vitruvius Scoticus*. He died in 1748. His son, Robert Adam, was born in 1728, and educated at the University of Edinburgh. He became a distinguished architect. His younger brother, James, was also an architect, and the two became associated in business. They designed and carried out a considerable number of great works—including the "Adelphi" in London, and many other buildings and mansions in England and Scotland. They published *The Works in Architecture of R. & J. Adams*, which contained among the plates, views of Sion House, Caen Wood, Luton Park House, and the Register House in Edinburgh. Robert died in 1792; and James died on the 17th of October 1794.

James Craig was born in Edinburgh, and attained some distinction as an architect. In 1767 he sent in a plan of the new streets and squares intended for the city of Edinburgh, which the Town Council with acclamation selected from other competitive plans. He died in 1795.

James Gibbs, born in Aberdeen, in 1674, attained distinction in this branch of art. He was educated at the Grammar School, and Marischal College, where he took the degree of M.A. He had a fair knowledge of mathematics, and resolved to carry it into the study of architecture.

In 1694, he went to Holland. His progress in the art seems to have been rapid, as his talents attracted the attention of the Earl of

Mar when he visited that country in 1700. This was the Earl who raised the standard of rebellion in 1715; and I am glad to state that he favoured Gibbs with his countenance, assisted him with money, gave him recommendatory letters, and advised him to travel into Italy—to improve his taste and expand his views, by a study of the grand edifices of this ancient country. When, through the effects of the rebellion, the fortunes of the Erskines fell very low, Gibbs remembered the man who had aided him in his early struggles, and bequeathed a thousand pounds, all his plate, and an estate of £280 a-year to the only son of his first benefactor.

In 1700 Gibbs proceeded to Rome, and studied several years under Garralia, a sculptor and architect of some note. He carefully examined the chief buildings in Italy, ancient and modern, took notes of them for his future guidance, and made sketches of such edifices as he thought excelled in form, or such parts of them as struck his imagination, and laid them down to scale. Thus, after studying and working for ten years in Rome, he deemed himself prepared for commencing business as an architect, and appeared in London in 1710. Mar was then in the ministry, and favoured by the Queen, and as much disposed as ever to befriend Gibbs. Shortly after this an act was passed in parliament which directed that fifty new churches should be erected in London. Mar introduced Gibbs to the Commissioners under the act, and he soon obtained employment. The first building which he completed was at King's College, Cambridge; but it has been severely criticised for its small portico, and for the many little parts in its construction.

The first building which he erected in London was of such a character as could not fail to produce a strong impression in his favour. "The portico of St. Martin's Church, for utility, compact beauty, and perfect unity of construction, is yet unsurpassed in the metropolis; and though in other respects the exterior is not so excellent, being deficient in light and shade, and the steeple inclines to be heavy—yet on the whole it forms a noble work. . . . The interior of the church is a perfect picture of architectural beauty and neatness of accommodation. All the parts are nicely distributed, and nothing can be added, and nothing can be taken away. It is complete in itself, and refuses the admission of any other ornament. . . . The chief charm of the structure, nevertheless, lies in the portico. . . . The columns are of the Corinthian order. It was finished in 1726." [2]

[2] *Lives of British Architects*, by Allan Cunningham, p. 290.

His next work, the Church of St. Mary's, in the Strand, was not so successful an effort; it fails to produce an impression of simplicity or real beauty. He also built the Ratcliffe Library of Oxford. "The interior of the library is admired by men of science for the skill with which the arrangements are made, and for the art displayed in the construction of the cupola."

He erected the great quadrangle of King's College, the Royal Library, and the Senate House at Cambridge, and presented the plan of the Church of St. Nicholas to his native city. After a long painful illness from stone, he died in London in 1754.

In 1728 he published his designs in one volume, from which he realised nearly two thousand pounds from the sale of the book, and of the plates after the impression was disposed of. He bequeathed to the Ratcliffe Library five hundred valuable volumes, chiefly on subjects connected with the arts; over one hundred of them were upon architecture, and included the best works on the subject then extant. His finished works and his unemployed designs show that he had an accurate and complete knowledge of all the principles of his art; and that he was a man who felt what was good, perceived what was majestic, and skillfully used his mathemetical knowledge in giving strength and beauty to architecture.

Robert Mylne was born in Edinburgh on the 4th of January, 1734. He was descended from an old Scottish family represented by a long succession of master masons and architects. He began his career under his father, who carried on a building business. Subsequently he travelled abroad, and resided four years in Rome, studying classic architecture; and he gained two medals in the Academy of St. Luke. After returning home he was engaged on many large mansions and public works in England, including the Blackfriars Bridge in London, and Inverary Castle, the chief seat of the Argyle family in Scotland. He died in 1811.

The preceding brief notices are simply to be understood as a preliminary indication of the important functions of the architect in the evolution of civilisation. For in reality the health and the comfort of the community in a large measure depends upon the knowledge and skill of the architects; they also have it in their power to do much to improve the taste of the community; and they have contributed, in conjunction with other agencies, to improve the sanitary condition of the centres of population in a considerable degree during the past hundred years. Let us place ourselves in imagination in

Edinburgh, Glasgow, or the other seats of population in the middle of the last century, and we shall then more easily realise the vast changes and improvements which have been effected in the dwellings and surroundings of all classes of the community.

Edinburgh was from an early period a walled town. One result of this was that so long as the necessity for maintaining the walls intact continued, when the population increased, instead of the town being extended outwards it was extended upwards. This was carried to an extreme in Edinburgh, as some of the houses were raised to the height of twelve storeys. In the middle of the eighteenth century the crowded state of the city was excessive; the streets were narrow, many of them mere footpaths and closes. The space from the Castle Hill to the Netherbow Port was occupied with one dense mass of houses, and most of them six and eight stories. The area within the original wall was extended immediately after the battle of Flodden, when a new wall was erected which enclosed the houses that had been built outside of the old wall. In 1624 it was again partly extended to include Heriot's Hospital and the Charity Workhouse. But the valley and marshy ground which ran along the northern side of the city was long an obstacle to extension in that direction. Necessity, however, prevailed, and at last the famous "North Loch," the scene of so many touching historic incidents, was conquered.

The idea of erecting a bridge across the North Loch had occurred to several persons long before it was actually executed.[3] But in 1769 the bridge across the Loch was completed, the marshy hollow filled, and Princes Street and the rest of the New Town were subsequently erected. The New Town is formed on a simple and uniform plan, which consists of two distinct and parallel sections: the first one lies between Princes Street and Queen Street, in which the chief central line is George Street; and these parallel lines of streets are intersected at regular intervals by good broad streets. The second section lies between Heriot Row and Fettes Row, in which the chief central line is Great King Street. Between the two sections there lies a large space of ornamental garden ground, and the varied surroundings of the New Town are admirable.

[3] It is said that Sir William Bruce of Kinross drew a plan of a bridge across the North Loch. The Earl of Mar, the patron of Gibbs, after his exile, prepared a plan for the extension of Edinburgh, both to the south and the north, and it also embraced a bridge of three arches over the North Loch; and claims to having suggested this bridge have been advanced by others.

The city has extended in other directions; but the Old Town has only been gradually opened up, and the last great scheme of improvement for opening up the narrow streets and removing the wretched dwellings in the alleys and closes was inaugurated by the late Dr. Chambers during his provostship of the city, which began in 1865. Under this scheme a considerable number of old and dilapidated houses were demolished, and a vast improvement effected. At the present time little of the real Old Town remains; of course the Canongate still exists, but it was originally a separate burgh and corporation by itself, and continued so till a recent period.[4] Since the middle of this century, the sanitary condition of Edinburgh has been greatly improved. A better system of sewerage, and a more adequate supply of water has been introduced into the city.

In truth, it may be said that Edinburgh as it now stands has been almost entirely reconstructed and built since 1770. Taken as a whole, the capital of Scotland is a beautiful city. The far greater part of it is built of freestone, but of several kinds. The Old Town was built of reddish sandstone, obtained in the neighbourhood; but the newer parts of the city have been mainly built of stones taken from the quarries of Craigleith, Redhall, Ravelston, Binnie, Humbie, and Hailes, which lies on the west side of the city, and yields several varieties of pretty hard freestone.

Touching the architecture of the city in general, there are many fine streets, both in what is called the New Town and in other parts of the city. George Street, looking at its width and length, is one of the best streets in Edinburgh; Princes Street and Queen Street, though very fine, are only terraces. There are a number of fine squares and crescents. But the street architecture in general has not much embellishment: there is a lack of window dressings, of cornices, and other mouldings. There are, however, many architectural objects in Edinburgh of great beauty and interest; the highly elaborated and beautiful spire of Scott's Monument; the classic and national monuments on the Calton Hill; the public buildings; and the memorable remains of the Old Castle upon the rock.

The chief city of the west, Glasgow, owing to its rapid progress and development in commerce, manufactures, and shipbuilding, was long seriously troubled with the evils associated with a crowded population. Efforts were from time to time made to remedy this, but it proved a difficult matter to overcome. Certain parts of the

[4] Mackintosh's *History of Civilisation*, Vol. III., p. 289.

city always became more and more crowded. In 1793, the corporation of Glasgow obtained an Act of Parliament to rebuild the Tron Church, and to remove the Tron steeple and the adjoining building, which projected into the Trongate. By this act they were also empowered to purchase the bowling green in Candleriggs, to erect the Tron Church there; to open a street through the Ravenshaw grounds to Buchanan Street; to purchase the grounds of Meadowflat; to make and extend several other streets; and to erect a bridge across the Clyde at the foot of Saltmarket. In 1806, an Act of Parliament was obtained for carrying Clyde Street eastward across the Stockwell to the Green; to form a new street running southward from the bottom of Queen Street to the river; and a street running northward from George Street to Duke Street, and terminating at Weaver Street. In 1813, an Act of Parliament was passed for the "regulation of chimneys, steam-engines, and other works within the city and suburbs of Glasgow." In 1818, the city first began to be lighted by gas.

In 1820, the corporation were empowered by an Act of Parliament to make a street of thirty-five feet in breadth, running eastward from Stockwell to King Street, thence eastward across the Saltmarket to the Molendinar Burn, and to causeway and pave it; a street seventy feet wide from Great Hamilton Street running eastward on the north side of St. Andrew Square onwards to the Cross; and another sixty feet wide, beginning at the west end of the Barrack wall, and running westward on the north side of the Gallowgate onward to the Cross. After 1825, several streets were extended and widened; still the old parts of the city remained in a crowded state, and vast numbers of people were huddled together in courts. In 1846, the Glasgow Municipal and Police Extension Act was passed in Parliament, which superseded the former Police Board, and the extension clause included the towns of Gorbals, Calton, Bridgeton, and Anderston.

Yet at the middle of this century the old localities of Glasgow were in a deplorable state of crowding; and in the beginning of the year 1852, the following statement was made by a high authority. "The overcrowding of the inhabitants of this city within excessively limited bounds, the overpeopling of numerous localities, the defective sewerage, and the still more defective supply of water, are too well known. We need no evidence as to the existence of these things —they are before us, and may be seen by everyone. Who can think

of these miserable places, the abodes and nurseries of filth and diseases and of crime, the plague spots to which strangers point to our shame. . . . But these alone will never suffice to meet this tremendous evil. We have now work before us, to cure and prevent; for it must not be forgotten that the evils so justly complained of are not confined to the older portions of the town. The overcrowding of houses, and comprising large numbers of human beings together, almost without light or air, are going on all around us; and the remedies required are therefore for prevention as well as for cure.

"Under the strongest conviction that if these evils be fearlessly met, if wise and wholesome provisions be made, if ample powers be given to enforce them, the sanitary condition of the city will be vastly improved, and the moral standing of the classes elevated, we proceed to treat of these remedial measures; and that we may present them in a regular form, we have divided the subject into the three following sections:—(1) The width of streets, height of buildings, and opening up of thoroughfares; (2) Drainage; (3) Supply of water." The report goes on to show that in these primary and important points Glasgow was then very defective; and it contains many wise, useful suggestions and proposals. They insist on wide streets, and that the height of the buildings should be regulated by the width of the street. After showing that the drainage, especially of the narrow wynds, lanes, and closes, were alarmingly defective, they proceed to state the leading principles which ought to govern an efficient system of drainage for the city of Glasgow. They next dealt with the water supply of the city, which was then mainly taken from the Clyde, and had become defective both in quality and quantity. [5]

A scheme for new waterworks was projected, and, in 1855, it was resolved to bring the water from Loch Katrine, to supply fifty million gallons a-day. The works were completed in 1859, and on the 14th of October the water was turned on by Her Majesty the Queen; Glasgow was jubilant, and cannons rent the air from the Castles of Edinburgh and Stirling in honour of the event.

The municipal authorities of Glasgow, and many of the leading citizens, had long been considering as to the best means of remedying the insanitary condition of the city, arising from over-crowded

[5] Report by Architects of Glasgow, printed in the *Transactions of the Architectural Institute of Scotland*, Vol. II., pp. 42-63.

houses, narrow streets, wynds, and closes; and an Improvement Act was applied for, which was ultimately passed by Parliament in 1866. The municipal authorities under the provisions of the Act were appointed trustees, and they were empowered to construct thirty-nine new streets, and to widen or alter other twelve, in all fifty-one streets. They were also empowered to borrow any sum not exceeding £1,250,000, and to levy a special tax during the continuance of the Act, which was limited to fifteen years. The trustees, with the Lord Provost at their head, at once proceeded to carry out the purposes of the Act: and before many years elapsed, the older portions of the city began to assume a brighter aspect; many of the narrow alleys and closes with their dens were demolished, while comfortable houses and open spaces have taken their place, and the death-rate has been reduced. Thus by the new supply of water, and the operations under the Improvement Act, a great change has been effected in the sanitary condition of Glasgow.

It appears that the greater part of Glasgow has been reconstructed and built within a period of little more than a hundred years. Touching the appearance and the architectural features of this great city, only a few general remarks can be made. The greater part of Glasgow, and the suburbs or burghs which have arisen in its vicinity, are built of freestone. As a whole, the streets of Glasgow are regular and well planned to meet the ends of business and traffic, which are the prime objects of the leading streets in all commercial cities. Many of the streets are broad and long, often running in parallel lines, and at regular intervals intersected by other streets running right and left. The architectural characteristics of the streets in the business parts of the city are pretty varied, although in general not remarkably striking; yet the long lines of buildings on the right and left of every street distinctly fulfil the requirement of the principle of utility.

In the suburbs, on every side, and especially in the Hillhead and Kelvinside districts, the dwelling-houses exhibit distinct and beautiful styles of architecture. Indeed, in the Kelvinside district there are terraces and crescents of exquisite beauty. For instance, to name one out of many, Grosvenor Terrace, for chasteness of design and execution is unrivalled in Scotland; its beauty is perfect and complete of its kind.

What has been said touching the reconstruction of Edinburgh and Glasgow, is applicable in a large measure to the other chief towns of

Scotland. In short, there are a number of considerable towns with from ten to twenty thousand of a population which were mere villages at the end of the last century. There are, however, certain towns in Fife, such as St. Andrews, and a few others, which still retain many of the features that characterised them a century or two ago.

The greater part of Dundee has been formed and built in the present century. Indeed, the population of Dundee has increased so rapidly that this was not a matter of choice but of necessity. This enterprising city was supplied with water on the system of gravitation about the middle of the century.

The reconstruction of Aberdeen was begun about the end of the last century; and since almost the whole city has been rebuilt. Union Street and most of the principal streets have been formed in the present century; and very little of the Aberdeen of even the eighteenth century now remains. Like other towns, it has extended rapidly, and occupies six times as much space as it did at the opening of this century. The leading streets of the city are broad, and the colour of the stones lends a certain degree of attraction to the lines of houses, which conveys an impression of strength and utility. In general, the street architecture is not loaded with embellishment or much variety of style; but the principles of simplicity and symmetry are well exhibited.

In this section I have touched briefly on a variety of subjects directly or indirectly connected with architecture: all of which have a most important bearing upon great centres of population, with reference to houses of every description, and the sanitary conditions of health. Even up to the middle of this century the defective ventilation and sewerage of nearly every town in the kingdom was notorious. The overcrowding arose from various causes, but chiefly from the rapid increase of the manufacturing population, and the migration of people from the country disticts into the towns. It has been shown in the preceding pages that the greater part of the chief cities of Scotland have been reconstructed and built in the later part of the last and the present centuries; and sanitary arrangements in the construction of buildings and dwelling houses has been more carefully studied, and a marked improvement in sanitation has been effected; yet, much remains to be done in this department.

Beauty in architecture is a leading aim of the art, but it is not the prime end of it. The first consideration concerning every building

intended for human habitation is light, ventilation, and sanitary arrangements; these constitute the primary end of the art. Although, of course, in public buildings, churches, schools, and mansions, the aim to attain beauty often is the chief object of the architect; and rightly so, if the other ends are not neglected.

Section II.

Monumental Art, Granite-Cutting and Polishing.

In the first volume an account of the early sculptured pillar stones and monuments found in Scotland was given; and it was observed that one class of monuments are of undressed granite and whinstone, with pecular symbols incised on one side. In the middle of the present century there were upwards of seventy of these rough incised pillars in the district to the north of the Forth; they are not found at all on the south side of the Forth, and the greater part of them were in the district between the Dee and the Spey. These monuments are believed to belong to a period prior to the introduction of Christianity. They were followed by a class of sandstone monuments more or less dressed, and on which the peculiar symbols are figured, along with crosses of various designs and degrees of elaboration. Some of this class are believed to belong to the eighth century.

The crosses on the west coast of Scotland, in the islands, and in Argyllshire, are several centuries later than those of the east coast. They are characterised by a graceful form of foliage, and a higher development of the knot and scroll work in great richness and variety. It is well known that the troubles and struggles which ensued after the Reformation in Scotland were unfavourable to art of every kind; and although grave-stones and monuments continued to be erected, the art and workmanship associated with them rather declined than advanced for a century or two. But about the middle of the last century this art began to revive, and continued to advance.

Many gravestones and monuments throughout the country are made of freestone. It is easily cut and dressed, and very suitable for elaborate ornamentation.

Regular granite quarrying began about the middle of the eighteenth century, and the modes of working it gradually became better understood. Before the end of the century machinery was used in

quarrying granite in Aberdeenshire; and in the present century the modes of working the quarries, and the appliances employed, have been greatly improved. At present the quantity of granite quarried annually in Aberdeenshire is upwards of 200,000 tons. The principal quarries are these:—(1) Rubislaw quarry, worked by a Company; (2) Cairncry quarries, worked by Mr. James Leith; (3) the Kemnay quarries, leased by Mr. John Fyfe, which are very large, and out of which great quantities of granite are annually sent to all parts of the country and to the foreign markets; on an average, the Kemnay quarries produce over 55,000 tons of granite per annum. The other quarries of note are those of Sclattie, Cairngall, etc.; and the Stirlinghill quarries in the neighbourhood of Peterhead, which yields the well-known variety of red granite. About eleven years ago a new red quarry was opened at Hill of Correnie, near Tillyfourie, on the estate of Cluny, which is worked by Mr. Fyfe, and a considerable number of men are employed in it. There are several other quarries on this hill. The stones taken from these quarries are used for a variety of purposes, especially in works where strength and durability are required; such as harbours, embankments, bridges, great public buildings, houses, pillars, momuments of every description—sarcophagus, tombs, crosses, gravestones, urns, etc.; ornaments and jewellery; kerb, causeway, and pavement stones.

There are extensive granite quarries in Kirkcudbrightshire. The quarries of Craignair, in the parish of Kirkmabreck, were long worked by the Messrs. Newall; and other quarries in the same locality have been worked for many years. A large quantity of the granite taken from some of these quarries has been used for building docks. About thirty-two years ago the branch of cutting and polishing granite was introduced in this locality by the Messrs. Newall. At Dalbeattie, in Dumfriesshire, granite cutting and polishing, and monumental work is carried on. In the island of Mull, red granite quarries are worked, and some of the stones are dressed and polished in the island; but a large quantity of the Mull granite is still exported from the quarries in the rough state to other parts of the country, where it is worked into monuments.

Aberdeen, however, is the chief seat of the granite trade, and of the special branch of cutting and polishing all varieties of granite monuments,—in which I include every work and stone intended by the living to commemorate the departed, or to mark their last resting-place.

Until the present century, the only tools used in dressing granite in this country were small picks; in fact, before this little granite dressing, as now understood, had been executed in Britain. About 1824, Mr. Alexander Macdonald commenced to dress granite in King Street, Aberdeen; and being a man of remarkable energy, his trade soon extended. In 1830, he removed his works to the foot of Constitution Street, where he developed the granite dressing and monumental works, which have become widely known. Mr. Macdonald died in March, 1860, and was succeeded by his son, Alexander; and under the title of Messrs. A. Macdonald & Field, the works were carried on for many years, and their reputation still farther extended. But in 1884, Mr. Macdonald died; and the works have since passed into the hands of a limited liability company, under the title of A. Macdonald & Co. These works are the largest in Aberdeen, and for a number of years they were the only works of the kind in the city. This establishment has for many years executed work and monuments which have been sent to all quarters of the globe. The firm had for long a showyard in London; and several experienced workmen were specially engaged in going from place to place in Britain, Ireland, and the Continent, to superintend the erection of monuments executed at the works in Aberdeen.

Besides monuments of every description, dressed and polished granite stones for buildings, exterior columns, pilasters, pillars, plain shafts for Gothic windows, string courses, trusses, and balustrades, were produced in these works. A considerable number of statues in granite have been produced in this establishment, of which may be mentioned the statue of the Duke of Gordon, the statue of Sir Charles Napier, at Portsmouth, and others. The firm employs about 500 hands.

The monumental granite trade has been rapidly developed in Aberdeen. In 1855, there were only seven granite stone cutting and polishing works in the city; in 1862, there were ten; in 1876, there were thirty; in 1882, there were fifty-five; in 1887, there were upwards of sixty; and in 1895, there were seventy-seven. The number of hands, however employed, has not increased in the same proportion as the increase of the yards. The number of men employed in this branch in 1886 was about 2000; and the number of hands employed in the quarries was about 1100.

Machinery and steam power has been gradually introduced, and is largely employed in all the principal works. The large massive

blocks of granite are laid down in the yards in the rough state as they come from the quarries. For various purposes the stones have to be sawed; and granite is cut into slabs of any thickness or thinness that may be required. The saws are made of iron plates, and the stones are placed under the machines; the saws, according to the old process, operated on the stones by means of quartz sand and water; but by this process it required a long time to cut through a stone. Recently, an American invented what is called "Chilled Iron," which in appearance resembles mustard seed; and this substance, along with oil, is now applied instead of the sand and water, and the stones are sawed through in a comparatively short time. There are a number of saws in one frame, which may be employed at once on one block.

An apparatus is used for dressing round pillars, which works very well. There are also machines for dressing other forms of granite stones, but they have not proved very successful. The greater part of this work is executed by the hand, thus:—(1) The blocks are rough-hewed and shaped into the prescribed form, which is executed by hand-picks with handles; (2) the surfaces are then reduced to a regular form by steel punches and chisels; they are next fine-axed or dressed, which is performed by various kinds of tools; (4) the last process is the polishing, which is now nearly all done by machinery; indeed, the polishing machinery has been brought to a stage of remarkable efficiency.

In granite, joints can be so closely made that when the various pieces which form a column or an elaborate monument are fitted up they are hardly perceptible. Granite monuments do not readily lend themselves to elaborate devices or ornamentation; still, many efforts have been made to extend the range of design and execution in this direction. Knotted and scroll work has recently been executed on a number of granite monuments produced in Aberdeen. Every effort should be made to extend the range of designs—there being too much sameness in granite monuments. A little more variety would produce a wonderful effect, and with the appliances now in operation this might be easily attained.

The lettering of the granite monuments is almost an art in itself, and this branch is executed with surprising taste and precision.

A few of the other granite works may be mentioned. Messrs. J. Wright & Son, John Street, have a large establishment, excellent machinery, and turn out a great quantity of work. Mr. J. Hutcheon,

King Street Road, commenced in 1869, and has developed an admirable establishment, in which the best machinery and appliances are brought into operation, and a considerable number of hands employed. Mr. William Boddie, St. Clair Street and King Street, began about twenty-three years ago, and has recently produced some fine and elaborate specimens of monumental work. Messrs. Garden & Co., King Street, employ a number of hands, and turn out excellent work.[6]

A large quantity of granite in the form of monuments, and other finished stones, is exported annually; the average value of these articles exported in recent years to America and the British colonies was upwards of £50,000 per annum. This was written is 1887, since, the value of the granite exported from Aberdeen has increased. For the twelve months ending on the 30th of September, 1894, the declared value of the polished granite exported from Aberdeen to the United States of America was £63,938.

[6] Amongst the other works may be noticed: Mr. William Keith's works, King Street; J. Petrie & Co., Wellington Road; Mr. J. Hunter, King Street; Mr. Alex. Milne, St. Clair Street; Messrs. M'Intosh & Rae, Hutcheon Street West; Mr. Robert Gibb, King Street Road; Mr. William Edwards, King Street; Mr. James Taggart, Great Western Road; Mr. Arthur Taylor, Jute Street; and Mr. Robert Simpson, Constitution Street.

CHAPTER L.

Fine Art, Music, and Painting.

Section I.

Music.

IN the preceding volumes frequent references were made to the national music, the music of schools, and teaching of music; and in this section a concise account of the progress of music and Scottish musicians in the eighteenth and nineteenth centuries will be presented.

The earliest collection of genuine Scottish melodies are those in the Skene MS., which belong to the early part of the seventeenth century. A translation of the MS. was executed by George F. Graham, edited by William Dauney,[1] who added a dissertation on Scottish music, and published in 1838. The MS. contains one hundred and fifteen airs, of these eighty-five were published, eleven were found to be duplicates, and the rest rejected as unintelligible or uninteresting. In the collection there are forty-five Scottish tunes, of which twenty-five were previously unknown.

The Celtic people had music from a very early period. In the last and present centuries many collections of Highland tunes, laments, marches, pibrochs, reels, and strathspeys have been published.

1. Until recently the dance music of Scotland mostly consisted of reels and strathspeys. The reel is probably of Celtic origin, and possibly indigenous. It was usually danced by two couples, and the figures differed slightly according to the locality; the dancers stand face to face, and when reeling describe a series of figures of eight. The music consists of eight bar phrases, generally in common time, but

[1] William Dauney was born in Aberdeen in 1800. He finished his education at the University of Edinburgh, and was called to the Scottish Bar in 1823. He found the Skene MS. in the Advocates' Library, Edinburgh, and, as indicated above, he devoted much attention and labour to it. In 1839 he left Scotland for Demerara, where he became Solicitor General for British Guiana. He died at Demerara in July, 1843.

occasionally in 6-4. The strathspey style of dance music derives its name from the valley of the Spey, where it appears to have been first practised. The word does not occur in connection with music till the last century, but earlier than this there were tunes suited to the strathspey style of dancing. The reel is a gliding dance, but the strathspey abounds in quick motions which brings every muscle into play.

The sword dance, and Highland fling are well-known styles of dancing. The first is performed thus:—Two swords are placed cross-wise, which gives four equal spaces between the points and the handles; the performer then begins to dance over the blade ends of the sword, and dances over each of the four parts in succession; he next dances heel and toe over the centre of the cross formed by the swords, and closes by dancing in quick time over all the spaces between the swords. In this dance the evolutions are very numerous, as they must all be performed without touching the swords; when properly and gracefully executed, it is a fine and beautiful atheletic exercise. The Highland fling, of which there are many varieties, is danced to the music of the strathspeys.[2]

[2] In a dissertation prefixed to "A collection of Highland vocal airs, a few of the most lively reels, and some specimens of bagpipe music," published by the Rev. Patrick Macdonald in 1781, Dr. Young says that—"at one time the music of the reels and strathspeys over all Scotland was played by the bagpipes, but at a later period Neil Gow and his sons did much to promote the use of the violin in playing Scottish dance music. . . . The Gow family, with the famous Neil at their head, all showed great originality in their tunes; "Caller Herrin'," by his son Nathaniel, has deservedly taken its place among our local melodies since Lady Nairne wrote her excellent words for it. But it is to be regretted that by changing the characteristic names of many of our old dance tunes, giving them the titles of the leaders of fashion of the day, they have created much uncertainty as to the age, and even the composition, of the tunes themselves."

Dancing has always been popular in Scotland, and I will adduce an instance in the person of a Scottish clergyman, a well-known and influential man in his time:—"I was very fond of dancing, in which I was a great proficient, having been taught at two different periods in the country, though the manners were then so strict that I was not allowed to exercise my talent at penny-weddings or any balls but those of the dancing-school. Even this would have been denied me, as it was to Robertson and Witherspoon and other clergymen's sons at that time, had it not been for the persuasion of those aunts of mine, who had been bred in England, and for some papers in the *Spectator* which were pointed out to my father, which seemed to convince him that dancing would make me a more accomplished preacher if ever I had the honour to mount the pulpit. My

The period from the Revolution of 1688 till past the middle of the eighteenth century was a stirring one in music and song; yet much of the music was not really new, for the writers of the songs, or those who selected the tunes, usually adapted melodies which the people knew and could sing; thus many of the old favourite airs got new names, while others have been preserved by Jacobite verses, though their earlier names are lost. The song on the Battle of Killiecrankie has the honour of having a Latin translation. It is sung to a stirring Gaelic bagpipe tune, which is doubtless older than the song. This tune seems to have quickly spread, for it was found in a Northumbrian MS. of 1694, under the name of the Irish Gillicranky.

It has been alleged that Neil Gow transformed some of our vocal melodies into dance tunes. "But the most that can be charged against him is that he altered the old names of many tunes, calling them after his patrons and patronesses, thus often rendering it doubtful whether a tune was his own composition or belonging to an earlier time."

Scotland has no great musicians and composers like those of Italy, Germany, and France. Yet Scottish music is national, and within a limited circle has its own characteristics. This has been long recognised on the Continent. Its distinctive features mainly consist in the charming tunes associated with the national songs, bagpipe music, and violin playing. We have had notable vocalists, many eminent pipers, excellent violin players, and numerous performers on other instruments. It has been admitted that in the development of bagpipe music the Scots are pre-eminent. In the development of the opera, oratario, and orchestra, the Scottish composers have not attained a very high position.

II. A brief account of noted Scottish musicians of the period is all that I can attempt. Adam Craig was born in 1667. He was an

mother, too, who generally was right, used her sway in this article of education. But I had not the means of using this talent, of which I was not a little vain, till luckily I was introduced to Madame Violante, an Italian stage-dancer, who kept a much frequented school for young ladies, but admitted no boys above eight years of age, so that she wished very much for senior lads to dance with her grown-up misses weekly at her practisings. I became a favourite of this dancing-mistress, and attended her very faithfully with two or three of my companions, and had my choice of partners on all occasions, insomuch that I became a great proficient in this branch at little or no expense."—*Autobiography of the Rev. Dr. Alex. Carlyle, Minister of Inveresk*, pp., 47-8, 1860. He was a minister from 1750 to 1805.

excellent violin player, a teacher, and composer. In 1730 he published a Collection of Scots Tunes. He died at Edinburgh on the 3rd of September 1741.

William Macgibbon was born in 1695, and was a noted violinist and composer. He published Six Sonatas for the German Flutes; and between 1740 and 1755 he compiled and edited three Collections of Scots Tunes, of which three editions were issued. He died at Edinburgh on the 5th of October 1756, and was interred in the Greyfriars Churchyard.

Robert Bremner was born about 1713. He acted for some time as a teacher of singing, but in 1748 he became a music seller in Edinburgh. He was the author of a number of works. His *Rudiments of Music* was published in 1756, and reached a third edition in 1763; his *Collection of Reels and Country Dances* appeared in 1761. He also published *Thoughts on the Performance of Concert Music*, and other works. He died on the 12th of May 1789.

John Riddell (of Glengarnock, Ayrshire,) was born on the 2nd of September 1718, and was a composer and compiler of music. He composed a number of strathspeys and reels, and several other pieces. Burns adapted Riddell's tune, "Finlayston House," to his fine song, "Fate gave the word, the arrow sped," for insertion in Johnson's *Musical Museum.* In 1776 he published two books of reels, etc. Some of his reels were popular, such as "The Merry Lads of Ayr."

Francis Peacock was born in 1723, and was a dancing master in Aberdeen. In 1776 he published *Fifty Favourite Scotch Airs for a Violin, German Flute, and Violincello*; in 1805 he issued *Sketches relative to the History and Theory, but more especially to the Practice of Dancing, as a necessary accomplishment to the Youth of both Sexes.* He died in Aberdeen on the 26th of June 1807, at the advanced age of eighty-four. He bequeathed a sum of money to the charitable institutions of Aberdeen.

Daniel Dow was born in 1732, a native of Perthshire. He was a popular teacher of music, and an excellent composer of strathspeys and reels. He was the author of *Twenty Minuets and Sixteen Reels*, which appeared in 1775; and also of *Ancient Scots Music for the Violin.* Many of his tunes were highly esteemed, such as "Athole House," "Monymusk," "The Brig o' Perth," "The Duchess of Gordon," and others. From 1765 he resided in Edinburgh, where he died on the 20th of January 1783.

John Holden was born about 1733. He was the author of a re-

markable *Essay towards a Rational System of Music*, published at Glasgow in 1770, which reached a third edition in 1807. He also issued a *Collection of Church Music* in 1766.

Neil Gow was born at Inver, Dunkeld, on the 22nd of March 1727. He began to play the violin when a boy, and was mainly self-taught; he received a few lessons from John Cameron, a violin player and teacher of music. He soon became distinguished as a violin player, especially of strathspeys and reels. He was exceedingly popular; for many years his service was in great request at fashionable assemblies and balls, and he was ably assisted on the violincello by his brother Donald. In short, Neil became a national favourite. As a performer on the violin of Scottish dance music he has perhaps never been excelled by any of his countrymen. In a notice which appeared in the *Scots Magazine* in 1809, by one who knew Neil, and had often heard his stirring strains, describes his style thus:—"His bow-hand as a suitable instrument of his genius was uncommonly powerful, and when the note produced by the up-bow was often feeble and indistinct in other hands, it was struck in his playing with a strength and certainty which never failed to surprise and delight skilful hearers. . . . We may add, the effect of the sudden shout with which he frequently accompanied his playing in the quick tunes, and which seemed instantly to electrify the dancers, inspiring them with new life and energy, and rousing the spirits of the most inanimate."

He composed seventy tunes, chiefly reels and strathspeys, many of which are much admired. He died at Inver on the 1st of March, 1809, in the eightieth year of his age. His fame still lives in the national mind, and is commemorated in the popular song:—

> "Ye a' hae heard o' famous Neil,
> The man that played the fiddle weel."

He had four sons, all of whom were violinists, and composed music. William was a good violin player, and composed a few strathspeys and reels. He died in 1791. Andrew wrote some good reels and strathspeys. He died in 1803. John composed a considerable number of tunes, mostly strathspeys and reels. He died in London on the 22nd of November 1826. Nathaniel, the youngest son, was born at Inver on the 28th of May 1766, and was the most distinguished of the family. He studied under his father and Robert Mackintosh, and subsequently under Alexander M'Glashan. He composed one hundred and thirty tunes, embracing strathspeys, reels, jigs, and other pieces. He edited and published nineteen *Collections*,

including his own compositions and arrangements, and those of his father and his brothers. He was a musician of great abilities and remarkable industry. He died at Edinburgh on the 19th of January 1831.

Alexander M'Glashan was born in Edinburgh in 1740. He was a violin player, composer, and teacher of music. In 1778 he published several collections of strathspeys and airs. He gave many concerts; and was a good teacher. He died at Edinburgh in 1797.

Robert Mackintosh was born in 1745. He was a noted violinist and teacher, and a composer of dance music. In 1793 he issued a work in four books, the first consisting of minuets, airs, gavottes, and reels; the second containing sixty-eight new reels, strathspeys, and quick steps, etc.; the third embracing sixty-eight new reels, and forty old reels for the violin and piano; and the fourth comprised new strathspeys and reels, and some old reels for the piano. Many of his strathspeys and other tunes were greatly admired. As a performer on the violin he was very highly esteemed. He died at London in 1807. His son Abraham, born on the 18th of June 1769, also attained distinction as a composer of reels and strathspeys.

William Marshall was born in Fochabers on the 27th of December 1748. He was engaged as house steward and butler to the Duke of Gordon till 1790, and subsequently he acted as factor to the Duke till 1817. He was a famous violin player, and an able and assiduous composer. Two hundred and eighty-seven of his tunes has been published, in three collections, the first of which appeared in 1793, containing thirty-six tunes; the second in 1822, embracing one hundred and seventy tunes; and the third in 1847. Many of his strathspeys and reels were very spirited and highly popular, such as his strathspeys—"Craigellachie Bridge," "The Marquis of Huntly," "Forglen House," and many others. He contributed much to advance violin music in Scotland. He died on the 29th of May 1833, in his seventy-fifth year.

Robert Petrie was born in Kirkmichael, Perthshire, in 1767. He was a violin player, a composer, and teacher of music. He published four collections of dance music. He played at many concerts and balls; and some of his strathspeys and airs were popular. He died in 1830.

Captain Simon Fraser (of Ardachie), was born in 1773. He was a violin player and composer of music. He edited a large and interesting collection of Gaelic airs published in 1816, many of which were

traditionally associated with Prince Charles, and also embraced a number of Fraser's own compositions. This work was republished in 1884. He rescued from oblivion many fine native airs, and it is said that a number of the tunes in the collection were composed by his grandfather. He died in 1852.

John Gunn was born in Edinburgh in 1765. He was a player and teacher of the violincello and flute, and the author of the following works :—*Forty Scottish Airs arranged for the flute, violin, and violincello; The Theory and Practice of Fingering the violincello, with a Dissertation on Stringed Instruments; The Art of Playing the German Flute, on New Principles;* in 1807 his work entitled, *An Historical Inquiry respecting the Performance on the Harp in the Highlands of Scotland from the earliest times until it was discontinued about the year 1754,* was published. He died in 1824. His wife, Annie Young, was an accomplished player on the piano and teacher of music. She published *An Introduction to Music,* illustrated by musical games, with accompanying apparatus familiarly and popularly explained, of which a second edition appeared in 1820, and a third in 1827. She died at Edinburgh on the 25th of February 1826.

James Davie was born in 1783, and attained distinction as a flute player, composer, and teacher of music. He resided at Aberdeen and played in the orchestra of the theatre. His works consist of—*A Collection of Psalmody; An Introduction to the Art of Singing; The Vocal Harmonist;* and the *Caledonian Repository,* a collection of strathspeys, reels, etc., which extends to six books, and is a valuable and interesting work. He died at Aberdeen on the 19th of November 1857.

George Hogarth was born at Carfral Mill, Lauderdale, 1783, and was educated for the law. He studied music, and became a musicographer and musical critic. He married a daughter of George Thomson, the friend and correspondent of Burns. In 1830 he became a contributor to the *Harmonicon;* and in 1834 he settled in London, and was appointed musical critic of the *Morning Chronicle.* From 1846 to 1866 he was musical critic of the *Daily News.* In 1835 he issued a volume under the title of *Musical History, Biography, and Criticism,* which was enlarged and republished in 1838, in two volumes. The same year, his *Memoirs of the Musical Drama,* in two volumes, appeared. His style of criticism was considerate and candid. His musical compositions consist of a few glees and songs. He

died in London on the 12th of February 1870, at the advanced age of eighty-seven.

George F. Graham was born in Edinburgh on the 28th of December, 1789, and educated at the High School and University of Edinburgh. He studied music, and became a musicographer, critic, and composer. In 1815 he acted as joint-secretary with George Hogarth of the Edinburgh Musical Festival, and the following year he issued an account of the Festival, to which he added some observations on music. He sojourned some time in Italy to extend his knowledge of music. He edited *Wood's Songs of Scotland*, issued in 1848-49, and republished in 1887. He wrote the article "Music" for the seventh edition of the *Encyclopædia Britannica*, which was republished separately in 1838, with the addition of "An Essay on the Theory and Practice of Composition." He also wrote the article "Organ" for the eighth edition of the *Encyclopædia Britannica*. He contributed a number of articles to musical and literary journals which tended to improve the public taste. He composed a few vocal tunes which were much admired. He died at Edinburgh on the 12th of March, 1867.

Finlay Dun was born in Aberdeen on the 24th of February, 1795. He was an able teacher of music, and a vocal composer. In 1829 he issued *A Collection of Solfeggios for Daily Vocal Exercise*, which was well received. In conjunction with John Thomson he edited *Paterson's Vocal Melodies of Scotland*, which were begun in 1837. He also issued in 1848 a Gaelic collection, entitled *Orain na'h Albain*. He died at Edinburgh on the 28th of November, 1853.

John Sinclair was born in Edinburgh in 1790. He was a celebrated singer and a vocal composer. His voice was very melodious and sweet. As a composer he is remembered by his songs, "The Bonnie Breast Knots," "The Mountain Maid," and others. He died at Margate on the 23rd of September, 1857.

John Templeton was born at Riccarton, Kilmarnock, on 30th of July, 1802. He was a famous tenor singer. His voice was rich and melodious, and of pretty wide compass. From 1833 to 1836 he sang with the renowned Madame Malibran, who preferred him to any other tenor singer. In 1846 he commenced his first tour as a public performer, and was very successful in this country and in America. He retired from public life in 1852, and died in the vicinity of London on the 2nd July, 1886. He had four brothers, all remarkable for their vocal gifts.

Isabella M. Scott was born in Edinburgh in 1786. She was a vocal singer and composer. In 1818 she married the well-known artist, Patrick Gibson. She composed the music to Lord Byron's fine song, "Lochnagar," and a number of Psalm tunes. She died at Edinburgh on the 28th of November, 1838.

Mary Anne Paton was born in Edinburgh in 1802. She was a celebrated and highly gifted singer. Her voice was powerful, sweet, and very expressive. In 1826 Weber first visited London, bringing with him his opera, "Oberon," which was specially written for the English stage, and was produced at Covent Garden under his own eye. On this historic occasion Mary A. Paton sang her part in a style which delighted the heart of the composer, and enraptured the crowded audience. In 1824 she married Lord William Pitt Lennox, from whom she obtained a divorce in 1831. Subsequently she married Joseph Wood, a vocalist. In 1834-36 she visited the United States of America, and sang in London in 1837 and 1844. She retired in 1845, and resided abroad with her husband from 1854 till 1863. She died at Wakefield on the 28th of July, 1864.

David Kennedy was born in Perth on the 15th of April, 1825. He was a famous singer, and a very popular concert-giver. With his highly gifted family, he travelled over many parts of the globe in his musical tours, and everywhere was well received. In America, Australia, New Zealand, and elsewhere, they attracted large and enthusiastic audiences. His eldest son David was born in 1849. He was an excellent tenor singer, and wrote an account of their musical tours. He died at Pietermaritzburg on the 5th of December, 1885. James was born in 1856, and was a fine baritone singer. His daughter Helen was a good soprano singer. Marjory was a sweet and expressive contralto singer. His two younger daughters, Kate and Lizzie, were both charming singers. It is very sad to relate that three of those gifted singers, James, Kate, and Lizzie perished in the fire which consumed the Opera House of Nice on the 23rd of March, 1881. David himself, the head of the family, died at Ontario, Canada, on the 12th of October, 1886. But his son, Robert, an able tenor singer, has been giving concerts alone since 1892.

Alexander Mackenzie was born in Montrose in 1819. He was an excellent violinist. From 1846 he was leader at the Theatre Royal, Edinburgh. He issued *The Dance Music of Scotland*; and composed a few airs for songs. He died at Edinburgh on the 2nd of October, 1857.

Angus Mackay was born in 1813. He was piper to Her Majesty the Queen. In 1838 he published a *Collection of Sixty Pibrochs*, which are very highly esteemed. He was accidentally drowned in the river Nith on the 21st of March, 1859.

Alexander M'Donald, a native of Badenoch, was a famous piper and composer. For a number of years he was piper to the late Earl of Fife. He gained a valuable gold medal at one of the competitions. He was one of the best pipers in Scotland. He died at Aberlour House, Banffshire, in 1884.

William Ross was born in 1815, a native of Ross-shire. In 1839 he joined the 42nd Regiment, and continued in the service till 1854, when upon the recommendation of the late Cluny Macpherson, he was appointed piper to Her Majesty the Queen. In 1876 he published a large *Collection of Pipe Music*, embracing forty-one piobaireachds and four hundred and thirty-seven marches, strathspeys, and reels, which was prefaced by an admirable essay on The Bagpipe and its Music, composed by the late Dr. Norman Macleod. The work was dedicated to the Queen, and a second edition was issued in 1885. Ross died in August 1891.

James S. Robertson (of Edradynate, Perthshire), was born on the 15th of March, 1823. He was educated for the legal profession, and in 1846 he was admitted a member of the Society of Writers to the Signet. When young he became a warm admirer of Highland music. He was instructed by Duncan M'Kercher, John M'Alpine, and other musicians. He took an active part in instituting the Edinburgh Highland Reel and Strathspey Society in 1881, of which he was President. He edited *The Athole Collection of Reels, Strathspeys, etc.*, which appeared in 1884, in two volumes, one of the largest collections ever published in Scotland.

William R. Broomfield was born in Inveraray on the 14th of October, 1826. He was a writer on music, and a composer. He edited and arranged a *Collection of National Songs* in four-part harmony, which was published in 1848-52. His very useful *Manual of Harmony* appeared in 1857; and *The Principles of Ancient and Modern Music* was published in 1863. He also composed a number of psalm tunes. He was a very quiet and unassuming man. He died in Aberdeen on the 17th of October, 1888, where in 1889 a monument was erected to his memory with one of his popular tunes—"St. Kilda" carved upon it.

James Walker was born in Aberdeen on the 6th of July, 1827, a

son of the late William Walker, merchant. He received a liberal education, and always took a keen interest in music and art. In many ways he endeavoured to diffuse a higher taste for music. His work entitled *Just Intonation in Song and Speech* was printed at Aberdeen in 1876 for private circulation, a valuable and instructive volume. He had formed a valuable collection of musical books and MSS., comprising five hundred volumes, which he presented to the Public Free Library of Aberdeen. Personally, he was a quiet, genial, and kind-hearted man. He died in Aberdeen on the 29th of January, 1895.

III. In psalmody and church music there has been a remarkable progress during the period under review. John M'Lachlan was born in Glasgow in 1740. In 1776 he published *The Precentor, with a Collection of Psalm Tunes*, which reached a sixth edition in 1799. In 1779 he issued an *Easy Introduction to Church Music*, which was republished in 1782. He died at Glasgow in 1791.

John Sievewright was born in 1771, he was a teacher of music, and published a *Collection of Church Tunes and Anthems.* He died at Old Meldrum, Aberdeenshire, in 1846. Neil Dougall was born in Greenock on the 9th of December, 1776. He was a teacher of music, and a composer of psalmody. He composed nearly one hundred psalm and hymn tunes, and anthems. He died on the 1st of October, 1862. James Farquharson was born in 1789. He was a composer and teacher of music; and in 1824 he published a *Collection of Sacred Music*, which contained a few original tunes. Charles Hutcheson was born in 1792. In 1832 he issued a volume entitled *Christian Vespers*, containing tunes in three and four parts, and an *Introductory Essay on Church Music.* Some of his tunes are fine. He died in Glasgow on the 20th of January, 1860.

Robert A. Smith was born on the 16th of November, 1780. He was originally a weaver, but assiduously studied music, and attained distinction as a singer, teacher, compiler, and composer. In 1807 he was appointed precentor at the Abbey Church of Paisley; and in 1823 choirmaster at St. George's Parish Church, Edinburgh. He was gifted with a sweet voice, a fine sense of melody, and a pretty clear knowledge of harmony. He was very industrious, and his works are numerous. In 1810 he issued *Devotional Music, Original and Selected;* in 1819 his *Anthems in Four Vocal Parts;* in 1820 *Sacred Harmony*, for the use of St. George's Church, Edinburgh: and other three of his *Collections of Psalmody* appeared in 1825, 1828, and 1829. He also

composed a considerable number of single pieces: and edited the *Scottish Minstrel*, in six volumes, published in 1821-24, which contained some of his own songs; and the *Irish Minstrel* issued in 1825. He died in Edinburgh on the 3rd of January, 1829. In a notice of his death, George Hogarth in the *Edinburgh Courant* wrote:—"Smith was a musician of sterling talent. His merits have been long recognised. . . . His compositions partake of the character of his mind: they are tender and generally tinged with melancholy, simple and unpretending, and always graceful and unaffectedly elegant. . . . He had the admirable good sense to know how far he could safely penetrate into the depths of counterpoint and modulation without losing his way, and accordingly his music is entirely free from that scientific pedantry which forms the prevailing vice of the modern English school."

William Smith was born in 1803. He was a musician of ability and refined taste. His *People's Tune Book* was published in 1844, a work of much merit. He died at Newtyle on the 31st of August, 1878.

Thomas L. Hately was born at Greenlaw, Berwickshire, on the 26th of September, 1815. In 1844 he was appointed precentor to the Free Church Assembly. He edited a collection of tunes entitled *The Free Church Psalmody*, which appeared in 1845; and *Scottish Psalmody*, issued in 1852. He also published *Historical Lectures on Psalmody*, with illustrations; and contributed a number of articles on music to various journals. He died at Edinburgh on the 22nd of March, 1867.

John Campbell was born in Paisley on the 2nd of February, 1807. He was a teacher of music and composer. In 1847 he published *The Sacred Psaltery*, comprising about fifty tunes, mostly original, and his anthem, "Rejoice in the Lord." He also edited a *Collection of Anthems, Choruses, and Sanctuses*. He died in Glasgow on the 7th of October, 1860.

In the present century Hymn Books have been introduced in the Presbyterian Churches of Scotland. Much improvement has been effected in the rendering of church music by the organisation and special training of choirs; and the introduction of organs. The question whether organs should be used in the service of Presbyterian and Congregational Churches, has been practically settled in the affirmative.

A Chair of Music was instituted in the University of Edinburgh

in 1839, and was endowed by General Reid. He was born at Straloch, Perthshire, on the 13th February, 1720, and was himself an amateur musician. He published a *Set of Minuets and Marches*, containing the famous air, "In the Garb of Old Gaul," and *Six Solos for a German Flute or Violin.* He died in London on the 6th of February, 1807. An annual concert is given on the 13th of February—the General's birthday—when one of his tunes must be performed. John Thomson was the first Professor of the new Chair. He was born at Sprouston on the 28th of October, 1805. He conducted the first Reid Concert, given in Edinburgh on the 13th of February, 1841. He composed three operas and a number of other pieces. He died in Edinburgh on the 6th of May, 1841.

William Ewing was born in Partick, Glasgow, on the 20th of May, 1788. He was an enthusiastic collector of music, and in the course of his long life had accumulated a valuable library of musical and other works. He bequeathed the larger portion of his musical library to Anderson's College, Glasgow, with a sum of £1000 for maintaining it; the remainder was left to the University of Glasgow. In 1866 he founded a Lectureship on Music in connection with Anderson's College. He died in Glasgow on the 12th of May, 1874, at the advanced age of eighty-six.

During the last sixty years many musical associations, societies, and choral unions have been instituted to promote the culture of music, and diffuse a higher appreciation of it among the people. Music touches the soul and heart of humanity more effectively than any other art. Let us hope that in the future it will be taught even more universally than in the past.

Section II.

Painting.

Such fragments of art as have been preserved from early times onward were noticed in preceding volumes, and it was observed that Jamesone was the first Scottish painter who attained a reputation. During the eighteenth and nineteenth centuries, however, the conditions favourable to the culture of art had arisen, mental philosophy was ably taught, a taste for literature diffused, science advanced, manufactures and commerce rapidly developed, and the wealth of

the nation immensely increased. This march forward was followed by art at some distance in the rearward. I shall, therefore, present a brief account of the progress of painting and the diffusion of taste in Scotland.

William Aikman was born in 1682, near Arbroath. He studied law for some time, but his bent for painting led him to change his aim. He went to Italy, where he studied three years. When he returned to Scotland he painted portraits, in which he excelled, and also tried his hand in historic painting. He died in 1731 in London.

Allan Ramsay, the painter, was a son of the distinguished Allan Ramsay, the poet, and was born in Edinburgh in 1713. It is said that he began to sketch at the age of twelve, and when in his twenty-third year he went to Rome, where he studied for three years. On returning home he painted the portrait of his father, and those of President Forbes and Archibald Campbell, Duke of Argyll.

Afterwards he removed to London, and soon found friends and patrons. The Earl of Bridgewater patronised him, and Lord Bute introduced him to the Prince of Wales, whose portrait he painted in full length. But the portrait which brought Ramsay almost immediately into notice was a whole-length one of Bute himself. It was a well-executed work. His admiration of the style of the great Italian masters brought down upon him the wrath of Hogarth and the satire of Churchhill; the former attempted to pun him under the name of "Ram's-eye," and also satirised him in "The Battle of the Pictures," impressed with the image and cross of St. Andrew, while the latter coupled him and his father in these disparaging lines:—

> "Thence came the Ramsays, men of worthy note,
> Of whom one paints as well's the other wrote!" [3]

Ramsay cared little for the satire of either the painter or the poet, and his father's fame could well take care of itself.

In spite of opposition, Ramsay prospered exceedingly in his profession. His skill in art, learning, and good sense, obtained for him ample employment. His pencil was called into requisition for ceilings and walls, as well as portraits; and he employed several workmen, who furnished bodies while he painted the heads. He passed a second time to Rome and stayed several months, and also visited

[3] "The feuds which in those days distracted the united commonwealth of letters and art may be traced in many a bitter verse, satiric print, and sarcastic memorandum."—Cunningham's *Lives of British Painters*, Vol. V., p. 37.

Edinburgh. When his father died, in 1757, he settled a pension on his unmarried sister, Janet Ramsay, who lived till 1804. In short, before Ramsay became a favourite with the King, he had accumulated an independent fortune amounting to about £40,000.

After George III. ascended the throne, court favour smiled freely upon Ramsay. In 1767 he was appointed portrait-painter to the court, which brought him a great increase of work, and he had to engage five assistants. There was such a strong desire to have portraits by him, that he was glad to employ any one to aid in advancing his pictures; but he always painted the head with his own hands. As the king often presented portraits of himself and the queen to his ambassadors and governors of colonies, Ramsay had a busy time manufacturing these royal effigies.[4]

When he was intently engaged on the first portrait of Queen Charlotte, all the crown jewels and regalia were sent to him; and he said that such a mass of jewels and gold deserved a guard, and accordingly sentinels were posted, day and night, around his house.

[4] "It often happened that the king desired the painter to convey his easel and canvas to the royal dining-room, that he might observe his progress and have the pleasure of his conversation. The painter, a bold, spirited, well-informed man, perfectly conversant with the state of the various kingdoms of Europe, spoke freely, and without disguise; and he was the only person about the court, save the domestics, who could speak German; the queen, more especially, found it an agreeable variety to chat with him in her native language. Ramsay, in short, was a great favourite. When the king had finished his usual allowance of boiled mutton and turnips, he would rise and say, "Now, Ramsay, sit down in my place and take your dinner." This partiality produced, of course, abundance of enemies; but they could do him no harm—for he was not dependent upon royal favour; and the extent of his fortune was, at least, as well known, and as sincerely envied, as either his accomplishments or his courtly success. He had many high friends: Lord Bute, the Duke of Newcastle, Lord Bath, Lord Chesterfield, and the Duke of Richmond, in particular, were frequently at his house, and that more, it was said, on matters connected with politics than painting. Ramsay loved and enjoyed this, for politics were his delight; he wrote with great vigour and facility, and dipped his pen freely in the public controversies of those times. He was known to be the author of many ingenious pieces on history, politics, and criticism, signed "Investigator," and since collected in a volume. . . . He corresponded, too, with Voltaire and Rousseau; both of whom he had visited when abroad; and his letters are said to have been elegant and witty. Ramsay, in short, led the life of an elegant, accomplished man of the world, and public favourite; the companion of the first of his day, and the admitted ornament of the highest societies."—Cunningham's *Lives of British Painters*, Vol. V., *pp.* 39-40.

He resided on the west side of Harley Street, and his studio consisted of a set of coachmen's rooms and haylofts gutted, and formed into one long gallery.

Unfortunately, he sustained a serious accident, which dislocated his right arm in so severe a way that he never fully recovered from its effects. Feeling his constitution shaken, and finding himself disabled, he left his work in Reniagle's hands—one of his own pupils, and went to Italy, where he resided for several years. But he never regained his strength, and died in August, 1784.

In his own art, "his execution was neat, careful, and finished; but the freedom of his pencilling never reached the character of boldness: the placid and the contemplative were his element, energy he never even attempted; and his colouring seldom deserted the regions of the pale and the grey." [5]

Alexander Runciman was born in Edinburgh in 1736, a son of an architect; and it was reported that he began to make drawings at an early age. When fourteen years of age, he was placed in the studio of John and Robert Norris, the former of whom was a landscape painter of some note in his time. He applied himself earnestly to the art, and in 1755 he commenced on his own account as a landscape painter. He did not succeed, however, in this branch; although many praised his paintings and sketches, yet few purchased any of them; nevertheless, he worked hard, and hoped that his hour of fame would come. In 1766, he went to Rome with the object of improving his powers by a study of the great works in the ancient city. He remained in Rome for five years, and practised his hand and eye in drawing from the antique, copying the works of the great masters, and studying the historic paintings in the Italian galleries.

At this time, as indicated in preceding chapters, the national spirit was rapidly recovering from the effects of the Rising of 1746, and resuming its energy in every direction; thus associations for the promotion of the fine arts began to be formed, and, in 1760, an academy was established in Edinburgh. While in 1753 Robert and Andrew Foulis, of Glasgow, had established in that city an academy of fine arts, in which engraving, modelling, and drawing were taught; and in which specimens of antique art were collected, and aspiring youths invited to come there and study free of all expense. Of course, an institution of this kind could hardly continue long; but for a time its influence was attractive and exceedingly beneficial.

[5] *Lives of British Painters*, by Cunningham, Vol. V., pp. 44.

When Runciman returned from Rome in 1771, he was solicited to become the head of the new academy in Edinburgh, at a salary of £120 per annum. He accepted the post, and commenced his task as a teacher.

He was very fond of historic painting, and submitted the design of a grand national work to Sir John Clerk, namely, to embellish the hall at Penicuik with a series of paintings from Ossian. Sir John at once agreed to this. But, when it became publicly known that Penicuik was to be adorned with a series of paintings from Ossian's poems, and that the hall was to be called Ossian's hall, the mirth and scorn of those who disbelieved in the authenticity of the poems was loud and unbounded. But the artist worked on, although it involved much bodily pain, as he had to lie upon his back while engaged on the ceiling of the hall, and his health began to fail; yet, he bravely pushed on and finished this great and romantic undertaking.

The work consists of twelve principal paintings, representing some of the finest passages in the poems; and at the time of its execution it was hailed as an original and national work. Although it was defective in several essential points, still it was entitled to be ranked with compositions of the epic order. He produced various other paintings, but the above was his greatest effort. For years his health had been failing; and on the 21st of October, 1785, he dropped down at the door of his lodgings, and expired, in the forty-ninth year of his age.

Touching his merits as an artist, there are different opinions. He sometimes violated the recognised rules of art in drawing and in other particulars; nevertheless, most of his efforts bear traces of real artistic genius. Brown, his pupil and friend, an able artist himself, says:—"His fancy was fertile; his discernment of character keen; his taste truly elegant; and his conceptions always great. Though his genius seems to be best suited to the grand and serious, yet many of his works amply prove that he could move with equal success in the less elevated line of the gay and the pleasing. His chief excellence was in composition, the noblest part of the art, in which it is doubtful whether he had any living superior. With regard to the truth, the harmony, the richness, and the gravity of colouring—that style, in short, which is the peculiar characteristic of the ancient Venetian, and the direct contrast of the modern English school, he was unrivalled. His works, it must be granted, like all those of the present time, were far from being perfect."

David Allan was born in Alloa, on 13th of February, 1744. He received the rudiments of education in the parish school, and early manifested a bent for drawing; so it was resolved to send him to the new academy of Glasgow, and in February, 1755, he was apprenticed to Robert Foulis, to learn the art of drawing, painting, and engraving. He applied himself diligently to his work, and made good progress. He always spoke gratefully of the kindness of Robert and Andrew Foulis; and after his own reputation had risen, and their fortunes from speculation in art had sunk, he did all that he could to assist them.

In 1764, he left the academy of Glasgow and returned to his father's house. It was then agreed among his friends that he should be sent to Rome to prosecute the study of art; accordingly, in the summer of 1764, he started, with hope glowing in his breast, and various letters of credit and introduction. He resided in Rome eleven years. When receiving instruction, he first gained a silver medal for skill in drawing; and next the gold medal of the academy of St. Luke, for the best historic composition; he was the second Scotsman found worthy of such an honour, Gavin Hamilton being the first.

The picture which gained him this prize is one of much merit, and excels everything else in the same style which Allan ever produced. The subject of the picture is the old dream of the "Origin of painting, or the Corinthian maid drawing the shadow of her lover." Of this small picture it has been said: "There is a happy elegance and serene grace about the group which have seldom been surpassed, and I have heard Wilkie praise it as one of the best told stories that colour and canvas ever united to relate."[6] While in Rome he produced several other pictures, and made four humourous sketches of Rome during the Saturnalia of the Carnival. But the paintings of the rustic manners of his own native land are the best of his many efforts.

Having returned home, he settled in Edinburgh. In 1786 he was appointed to the mastership of the Academy in Edinburgh, in succession to Runciman. He held this position for ten years, and found leisure to plan and execute a work which he had contemplated in early life. This was an edition of Allan Ramsay's *Gentle Shepherd*, illustrated with landscapes and groups of characters copied from the scenes where the drama was laid. With this object he

[6] *Lives of British Painters*, by Cunningham, Vol. VI., p. 27.

visited the district and every hill, dale, stream, and cottage, which could be admitted into the landscape of the poem. He copied whatever appeared suitable, admitted freely the faces of the old men and women into his sketches, and used them afterwards in his finished drawings. His finished drawings numbered twelve, but they are of unequal merit. Those in which age is depicted have most merit. Although he was not in all his delineations quite successful in catching the scenes of the poem, yet in his cottage scenes he has seldom been surpassed.

Touching the designs, and the way in which the plates were prepared for the work, he says:—"I have engraved them in the manner called *agnatmenta*—a late invention which has been brought to great perfection by Mr. Paul Smedly. A painter finds his advantage in this method, in which the pencil may be associated with the graver. It will be easily seen that I am not a master in the mechanical part of this art, but my chief intention was not to offer smooth and expensive engraving, but expressive characters and designs. How far I have succeeded it does not become me to say." He was right; the engraving is rough, quite unlike the smooth work produced now, still it is full of nature, which compensates for many defects. The poem associated with its illustrations was beautifully printed, and appeared in 1788; it was one of the first works of the kind produced in Scotland, and it rendered Allan popular.

His mind teemed with varied subjects—historic and domestic—but his homely subjects are the most interesting. The more important of these were "The Highland Dance" and "The Scotch Wedding," that is, the "Penny Wedding." The wedding is full of joy, quiet humour, and boisterous glee; it was engraved and exhibited over Scotland, and few who saw it could resist laughter. Such subjects, in whatever form presented, were for long dear to the peasantry.

Burns had just commenced his career when Allan's rustic pictures began to attract public attention, and the poet was amongst the first to perceive the characteristic merit of these pictures. When Burns was writing his fine lyrics, the idea occurred to Mr. Thomson, the proprietor of the work for which they were designed, that the hand of Allan might be employed to illustrate some of the best scenes in Scottish song. Accordingly, about twelve illustrative scenes were produced, some of which embodied the images, serious and comic, of Burns, and were exceedingly rich and expressive. Mr. Thomson

says—"Allan has just sketched a charming design for 'Maggie Lauder.' She is dancing with such spirit as to electrify the piper, who seems to be almost dancing too, while he is playing with the most exquisite glee." The sketch "John Anderson my Jo" is also very good. These and others of Allan's designs were submitted to Burns. As the work of illustration proceeded, Burns found opportunities of commending the designs of the painter. He says in one of his letters—"'Woo'd and married an' a'' is admirable; the grouping is beyond praise. The expression of the figures, conformable to the story of the ballad, is absolutely faultless perfection."[7]

The reputation which Allan attained from these works soothed his declining years, for his physical strength was never great, and in his later years he was afflicted with dropsy and asthma, and he died in August, 1796, in the fifty-third year of his age.

A number of other painters of this period may be briefly mentioned. Gavin Hamilton was a native of Lanarkshire, and attained some distinction. He resided in Rome, and executed pictures which were exact and graceful, but rather cold; he died in 1797. John Donaldson was born in Edinburgh in 1737, and was a distinguished miniature portrait-painter. In 1765 and again in 1768 he gained the prizes given by the Society for the Encouragement of the Arts, etc., for the best pictures in enamel. He painted a portrait of Hume, which greatly pleased the renowned philosopher, who said: "It is the best likeness that has been done for me." Some of his etchings were also admired; he died in 1801. John Brown was born in Edinburgh in 1752. He was notable for pencil-drawings, and some of his small portraits were meritorious; he died in 1787. Archibald Skirving was a native of Haddington, and born in 1749. He studied for some time in Italy, and mainly devoted his attention to the study of portraits in crayon; he died in 1819. John Bogle was born in

[7] Cunningham says:—"Allan's merits as a painter are of a limited nature; he neither excelled in fine drawing nor in harmonious colouring, and grace and grandeur were beyond his reach. He painted portraits which were chiefly remarkable for a strong homely resemblance; he painted landscapes, but these wanted light and air; and he attempted the historical, but save in one instance, 'The Corinthian Maid,' all his efforts in that way were failures. His genius lay in expression, especially in grave humour and open drollery. . . He is among the painters what Allan Ramsay is among poets—a fellow of infinite humour, and excelling in all manner of rustic drollery, but deficient in fine sensibility of conception, and little acquainted with lofty emotion or high imagination."—*Lives of British Painters*, Vol. VI., p. 48.

Glasgow. He excelled in painting miniature portraits, and loved to paint the heads of ladies, which he executed finely and gracefully; he died in 1804. Alexander Nasmyth was born in Edinburgh on the 9th of September, 1758. He was among the first Scotsmen who attracted some notice in landscape paintings. He studied two years in Italy, devoting his attention to the old masters, and practising landscape-sketching. On returning to Edinburgh he recommenced portrait-painting, in which he was very successful. He painted the well-known portrait of Burns, which has been often engraved. From 1793 he mainly directed his attention to landscape and scene-painting, in which he attained considerable success; he died in 1840. Personally he was highly esteemed by a wide circle of friends.

Sir Henry Raeburn was born on the 1st of March, 1756, at Stockbridge, Edinburgh, the son of a manufacturer, but he lost both his parents when only six years of age. He had the good fortune, however, to be placed in Heriot's School, where he was well educated. At the age of fifteen he was apprenticed to a goldsmith in Edinburgh, and he soon began to draw caricatures of his companions in the shop. At length he tried his hand in painting miniature portraits. The goldsmith, his master, was a mild and considerate man, and he praised these youthful efforts, took him to see Martin's pictures—an artist who produced portraits in St. James Square—which greatly encouraged Raeburn. Indeed, his master indulged him to the utmost limit, and the youth usually painted two portraits a week, which brought him a considerable sum of money. At last he made an arrangement with the goldsmith to have all his time to himself by paying a certain sum of money for the remainder of his apprenticeship.

His mind was developing, and he soon formed a higher conception of art, and aspired to produce more important works than miniature portraits. He erected a small studio, began to try his hand on oil-portraits, and succeeded better than he expected. His chief difficulties were the preparation of the colours, putting them on the palette, and applying them in accordance with the rules of art as taught in the academies. He had all this to find out himself, which doubtless contributed to the development of his peculiar genius.

He became known in Edinburgh, and commissions for his portraits increased. In his twenty-second year he married a lady who brought him a considerable fortune, and it was recorded that his profession was yielding him an income more than equal to his wants;

thus he was regarded as a man whom genius and fortune had united to raise.

But he was well aware that he had still much to learn in his art, and resolved to improve himself by a study of the best models. Accordingly, accompanied by his wife, he proceeded to Rome, where he studied and worked for two years. He returned to Scotland in 1787, and soon had his hands full of work. He was then in his thirty-first year, in good health and high spirits, with a gallery worthy of being seen by people of taste and rank, and to crown all, he was blessed with children and domestic happiness. Thus he was in the very best circumstances for producing quality and quantity of work.

For many years he usually had three or four sitters a-day, and to these he gave an hour and a-half each. He rarely kept a sitter more than two hours, unless the person happened to be gifted with uncommon talents, which was frequently the case; then he was in his element, and never failed to detain the party till the arrival of a new sitter indicated that he must be gone. For a head size he commonly required four or five sittings; but his power of mind and his faculty of discernment were such that the first sitting rarely came to an end without his having fairly grasped the character and disposition of the individual. He never drew his heads or any part of the body with chalk, but at once began with the brush. "The forehead, chin, nose, and mouth, were his first touches. He always painted standing, and never used a stick for resting his hand on; for such was his accuracy of eye and steadiness of nerve that he could introduce the most delicate touches, or the utmost mechanical regularity of line, without aid, or any other contrivance than fair off-hand dexterity."

The following detail of his mode of working is from one who knew him in his early days, and sat to him after he had risen to fame:— "He spoke a few words to me in his usual brief and kindly way, evidently to put me into an agreeable mood; and then, having placed me in a chair on a platform at the end of his painting room, in the posture required, he set up his easel, beside me, with the canvas ready to receive the colour. When he saw that all was right, he took his palette and his brush, retreated back step by step, with his face towards me, till he was nigh the other end of the room; he stood and studied a minute more, then came up to the canvas, and, without looking at me, worked upon it with colour for some time. Having done this, he retreated in the same manner, studied my looks

at that distance for about another minute, then came hastily up to the canvas and painted a few minutes more. I have sat to other artists; their way was different—they made a careful outline in chalk, measured it with compasses, placed the canvas close to me, and looked me almost without ceasing in the face, proceeded to fill up the outline with colour. They succeeded best in the minute detail—Raeburn best in the general result of the expression; they obtained by means of a multitude of little touches, what he found by broader masses; they gave more of the man, he gave most of the mind." [8]

Raeburn lived at a period which gave birth to many eminent Scotsmen, and he painted portraits of a considerable number of them, a few of which may be mentioned. He executed a full-length picture of Sir Walter Scott, in which the resemblance to the great novelist is admirably reproduced. His portrait of Dugald Stewart is much admired for its striking likeness of the expression of the original; and also that of Professor Playfair. It would be easy to form a long list, but it is unnecessary; and I only add that most of the eminent names in literature, science, law, and politics, in or connected with Edinburgh, were amongst the sitters of this highly-gifted artist.

In the later years of his career honours flowed upon him. He was elected a member of the Royal Academy of London in 1815; afterwards he was chosen a member of the Imperial Academy of France; in 1817, he was elected an honorary member of the Academy of the Fine Arts of New York; and he was also admitted a Fellow of the Royal Society of Edinburgh, which indicates a recognition of his well-known accomplishments outside of his own profession.

When George IV. visited Edinburgh in 1822, Raeburn received the honour of knighthood; and it is recorded that "in the opinion of all who loved the arts, the honour of knighthood had never been more worthily bestowed." Soon after, his brother artists honoured him with a public dinner in Edinburgh; and in replying to their expression of love and esteem, he modestly said that "he was glad of their approbation, and had tried to merit it; for he had never indulged in a mean or selfish spirit towards any brother artist, nor had at any time withheld the praise which was due to them when their works happened to be mentioned."

In the summer of 1823, in the midst of his work, he was suddenly attacked with a general decline of his strength; and

[8] *Lives of British Painters*, by Cunningham, Vol. VI., pp. 217-221.

after a week's illness, he died on the 8th of July, in the sixty-eighth year of his age. In every respect he was a noble specimen of genius and humanity. He was candid and modest, ever ready to lend a helping hand to merit and genius in art. Throughout his life he quietly discharged all the duties of a good citizen. In the words of one who knew him well—"His varied knowledge, his agreeable manners, his numerous anecdotes, and his general conversation, at once easy and unaffected, with now and then a touch of humourous gaiety, made him a delightful companion; he told a Scotch story with almost unrivalled effect; and did the honours of a handsome house and elegant table with all the grace of a high-bred gentleman. . . . First and last among all the children of art, no one was ever more widely respected than Sir Henry Raeburn, and his tall, handsome figure, and fine, open, manly countenance will not be forgotten for many a day in the place which knew him."

As a portrait painter, his merits are of the highest order. His analytic grasp, imaginative and reproductive faculties have never been surpassed by any Scottish artist. He aimed at elevation of style, and brought out the mental qualities of his sitters; and by the unrivalled powers of his own mind, he rose above the mere mechanical rules of art and operated in the mental region. He thought that the distant view which he took presented nature in its grandest expression, and he seized the mental qualities and caught the ruling passion of the face by reproducing the general result.

Andrew Robertson was born in Aberdeen in 1778, and has been sometimes called the father of the improved style of miniature painting in this country. He appeared in London in 1800, and his talents soon gained him patronage. West, the President of the Royal Academy, assisted him, and recommended him to George III., and in a short time he found himself amply employed. He might have attained a higher position in art if he had devoted himself exclusively to his profession; but he was a lover of music, and occasionally played second violin to the famous Salaman. His disposition was exceedingly benevolent, and he engaged in many movements of a public character. He took an active part in establishing the Scottish Asylum in London, and also in founding the Artists' General Benevolent Institution. His own acts of public and private benevolence were numberless, and he died universally respected and beloved in 1846.

Sir David Wilkie, an eminent Scotch painter, was born at the

manse of Cults, Fifeshire, on the 18th of November, 1785, a son of the minister of the parish.[9] He early resolved to become a painter, and in the end of the year 1799 he entered the Trustees' Academy of Edinburgh. He applied his mind and attention intently to his work, and under the inspiring influence of Mr. Graham, who was the head of the Academy, he made rapid progress in his studies. Amongst his schoolfellows may be mentioned William Allan, John Burnet, Alexander Fraser, and David Thomson, all of whom subsequently attained distinction in various branches of painting. In 1804 Wilkie left the Trustees' Academy, with the good wishes of all who knew him, and returned to his father's manse of Cults. At this time the influence of David Allan became apparent in Wilkie's early efforts—in his picture of "Pitlessie Fair." He produced a number of miniature portraits, and other pictures and sketches. But he began to think Fife too limited a field, and resolved to go to London.

In his nineteenth year, on the 20th of May, 1805, he sailed from Leith for London. He entered the Royal Academy as a probationer, and studied earnestly, and on a wider variety of specimens of art than had before been accessible to him. His application was intense and concentrated, hence his rapid and remarkable success, for genius mainly consists in the power of concentrated and prolonged attention. He studied both the theory and practice of his profession. In 1806 he produced his picture "The Village Politicians," and soon received commissions from noblemen and gentlemen of taste. At this time Wilkie became acquainted with his countryman, Andrew Wilson, a distinguished landscape painter, just returned from Italy. They met at the request of Mr. Cunningham "for the first time, one morning, at William Thomson's. There were present, besides Wilkie, young Hadyn, William Howel, David Maclagan, and a Mr. Callender, all seemingly very intimate, and I was told that it was their practice to meet in this way at one another's lodgings to converse about art. To be admitted into such a society was very agreeable to me."

Wilkie began to exhibit his pictures at the Royal Academy of London in 1806; in that year his "Blind Fiddler" and "Village

[9] Allan Cunningham, in his work entitled, *The Life of Sir David Wilkie, with his Journal, Tours, and Critical Remarks on Works of Art, and a Selection from his Correspondence*, has so fully treated Sir David and his works, that lengthy details are unnecessary. Those who desire fuller information of this eminent artist, will find an ample store of it in Cunningham's three interesting volumes.

Politicians" were exhibited, and he continued to exhibit his pictures regularly. He was elected an Associate of the Royal Academy in 1809, and a Royal Academician in 1811. He travelled on the Continent, and visited the art galleries of France, Holland, and Rome; made memoranda, and wrote journals of whatever he deemed most worthy of attention in relation to art. He produced many pictures, and his reputation continued to rise. In the Royal Academy Exhibition of 1829 eight pictures from his hand appeared upon the walls. In June, 1836, he received the honour of knighthood; he bore all his honours with meek serenity.

In August, 1840, he started for a tour in the East. He proceeded by the Hague, Cologne, Munich, and Constantinople, and thence to Smyrna, Beyrout, Joppa, and Jerusalem. The state of his health was precarious before he went away, and on the homeward passage it became worse. On the 1st of June, 1841, on board the *Oriental* steamship, not far from Malta, he expired. The authorities would not allow his body to be landed, and in consequence it was committed to the deep. Thus died Sir David Wilkie in the fifty-fifth year of his age. The tidings were received with deep regret throughout the country, for he was a popular favourite, as his works spoke to all classes of the people, and all degrees of taste.

As an artist and painter he was fertile, vigorous, and varied. Considering his comparatively short life, the number and the variety of his works are truly marvellous. But it could scarcely be expected that all, or even most of his pictures, would be stamped with the characteristics of the highest art. Accordingly, his paintings are of extremely various degrees of merit; even his warm friend and biographer recognises this. Still, after all fair deductions, Wilkie's leading pictures form a collection which amply attest his powers of original conception, imaginative range, realistic faculty, and skill in execution. That he might have attained even greater perfection if his life had been longer spared is very probable, for he had been moving in a new style, which was not fully developed when he was suddenly cut off.

Mr. John Burnet, an eminent engraver and painter, was born near Edinburgh in 1781. He was placed under Robert Scott, a landscape engraver in Edinburgh, where he learned the practical part of engraving and etching; and, at the same time, he attended the Trustees' Academy, where he was a school-fellow of Wilkie. Touching this part of his career, he says:—"I have often thought that my following

the profession of an engraver and painter at the same time cramped the greater extension of either, as both are of sufficient difficulty to require the undivided attention to arrive at a high degree of excellence. With regard to myself, my arrangements precluded my having the palette so often on my thumb as is absolutely necessary to acquire a good style of colouring, independent of manual dexterity."

Burnet was more inclined to engrave figure subjects than landscapes. He formed his style upon some points from the book illustrations of James Heath, an English engraver; but he chiefly followed Cornelius Visscher. Burnet went to London, full of hope and confidence, and found himself in his element. His first engravings were for Cook's Novelties; but he longed for some larger work to exercise his talents, and asked the engraving of the "Jew's Harp," which he got. This was the first of Wilkie's pictures which was engraved—the first of a long series of prints after his esteemed works; the engraving of it brought other work to Burnet.

In 1813, Burnet visited Paris, and remained five months, intently engaged in copying and studying from the magnificent collection in the Louvre, at that time gathered from all quarters of Europe. It was chiefly the materials which he then formed that led him to produce his *Practical Hints on Painting*, and his other literary essays relating to the fine arts. His chief work in painting is "The Greenwich Pensioners," which was intended as a companion picture to Wilkie's "Chelsea Pensioners."

His younger brother, James, born in 1788, at Musselburgh, attained distinction in a special branch of painting. His method was to go into the fields, and note down in his sketch-book bits of beautiful landscape, cattle, and rustic figures, engaged in their avocations; and these he afterwards embodied in composition, and produced "Cattle going out in the Morning," "Cattle returning home in a Shower," "Crossing the Brook," "Breaking the Ice," and other fine pictures. But his life was short; he died in the twenty-eighth year of his age, regretted by all who knew him and could appreciate his excellence.

Andrew Wilson was born in Edinburgh in 1780. He studied in Italy, as already indicated; he was distinguished in landscape painting, and for his extensive knowledge of foreign paintings. He was professor of drawing in the College of Sandhurst, which he resigned in 1818 on being appointed master of the Trustees' Academy in Edinburgh. His pictures are characterised by elegant and correct drawing, classic forms, beautiful arrangement, and graceful handling,

and especially his fine rendering of the pearly tints of daylight and the golden splendour of sunset are much admired. He died in 1848.

In the early part of this century Andrew Donaldson held a distinguished place amongst Scottish landscape and water-colour painters. Of his early days little is known ; it is reported that he was born at Comber, near Belfast, and was taken to Glasgow in his childhood, where he resided till his death, which happened in 1846. Although in his youth he was not specially trained to art, yet from an early stage of his life his natural bent seems to have led him to devote his time to it. His early drawings mostly represent some of the more quaint and picturesque scenes in Glasgow and its immediate vicinity. Afterwards he extended the field of his operations to many parts of Britain and Ireland, which afforded him new scenes. The result of these excursions appeared in a series of drawings which he published, marked by a keen appreciation of the beauties of nature, and executed in a style at once original and charming. His style was characterised by fineness and softness of execution, clearness of colour, and striking breadth of effect. As a teacher he was also long and favourably known to the community of Glasgow.

Sir William Allan was born in Edinburgh in 1782 ; and was originally trained as a coach-painter. But he afterwards studied for several years at the Trustees' Academy, and subsequently he proceeded to London, took the painter Opie for his model, and produced a picture called "A Gipsy Boy and Ass," which was exhibited at the Royal Academy in 1805. Having, however, failed in his hope of success in London, he started for St. Petersburg, and through the influence of Sir Alexander Crichton, then physician to the Imperial Family, he obtained some patronage as a portrait-painter. He visited the interior of Russia Tartary, and Turkey, where he collected materials for several original and characteristic works illustrative of the scenery and customs of Eastern Europe, which he subsequently produced. In 1809, he sent a picture to the Royal Academy called "Russian Peasants keeping their Holiday," but it did not attract much attention ; and he sent no pictures to the Academy exhibition for the next six years. He returned to London in 1814, and the following year exhibited his picture of "The Circassian Captives," now or lately in the possession of the Earl of Wemyss. This was followed by a painting of "A Circassian Chief selling to a Turkish Pasha Captives of a neighbouring Tribe taken in war," and by others of a similar character representing scenes which he had seen in his

travels. These paintings, however, did not sell at the time; and he was so much disappointed that he talked of retiring to the wilds of Circassia, and bid adieu to the land of his birth. He soon after tried a different class of subjects, such as his "Press Gang," "The Parting of Prince Charles Stuart and Flora Macdonald at Portree;" still he failed to gain much public recognition, till the appearance of his picture representing the murder of Archbishop Sharp on Magus Moor, which was engraved and published, and had a run of success.

He then resolved to devote himself entirely to Scottish historic subjects. He produced a picture of "John Knox admonishing Mary Queen of Scots" on the day that her intention to marry Darnley was proclaimed. This was followed by other pictures of Scottish historic characters, including "The Regent Murray shot by Hamilton of Bothwellhaugh," which was purchased by the Earl of Bedford for 800 guineas. In 1835, he attained the rank of a Royal Academician; and, in 1842, he was president of the Royal Scottish Academy. In 1843, he exhibited at the Royal Academy Exhibition a picture of the battle of Waterloo, which was purchased by the Duke of Wellington.

Sir William died at Edinburgh, in his painting room, in February, 1850, while engaged on a large unfinished picture of the battle of Bannockburn.[10] As a painter, his merits mainly consisted in his dramatic powers of telling a story on canvas, and skill in composition; in colouring he was deficient.

David Roberts was born at Stockbridge, Edinburgh, in 1796. He was originally a house-painter in Edinburgh; and in his twentieth year showed his talent for pictorial art in the form of stage scene painting, which he executed for a company of travelling players. He worked several years as scene painter for the stage in Edinburgh, Glasgow, and London. He repeatedly visited France; and, in 1832, he went to Spain, and thence passed to Morocco. The fruit of the latter journey was a series of drawings, published in lithography in 1837, under the title of "Picturesque Sketches in Spain." At the same time he was engaged in making finished drawings for various publications. In 1838 and 1839, he travelled in Egypt and Syria;

[10] The battle of Bannockburn is a grand subject for a historic picture. But a subject which would demand from the artist a rare grasp of analytic power, and the imaginative and realistic faculties, combined with skill in arrangement and composition. The details no less than the conception of such a picture would require much thought and study to develop and execute it in a thoroughly complete form.

and the results of this tour were lithographed and published in the well-known work entitled, "Roberts' Sketches in the Holy Land, Syria, and Egypt." Between 1849 and 1855, he made several visits to Belgium, France, and Italy. Mr. Roberts, in 1858, was presented with the freedom of the city of Edinburgh, "in testimony of the appreciation of his high artistic talents, and of the lustre which his works have shed on his native city." It has been said of him:—"His name will justly occupy a foremost place in the British school of architectural and landscape painting. His mastery of effect and breadth of treatment in interiors was very great, though it must be admitted that they sometimes savoured of the trick of stage decoration, to which, during so many years, his hand had been applied. His paintings in oil numbered about two hundred and sixty, those in water-colours, not including sketches innumerable, amounted to five times that number. A collection of seventy-three oil paintings and sketches, and eight hundred water-colour drawings and sketches, which were found in his studio after his death, were exhibited during some months (1865) at the Architectural Gallery in Conduit Street, and afterwards sold at Christie's and Manson's, producing, collectively, upwards of sixteen thousand pounds. . . . Mr. Roberts, throughout his life, kept copious journals, in which he included pen sketches of all his pictures as they left his studio, the date of their exhibition, name of their purchasers, and the price which he received for them." He continued to work to the last; and died suddenly in November, 1864.

William Bonnar, a distinguished portrait painter, was born in Edinburgh in 1800. He produced a large number of fine pictures, some of which have been engraved and widely circulated. He died in 1853.

Thomas Duncan was born in 1807, at Kinclaven, Perthshire, and educated at Perth. He early manifested an inclination for drawing such objects as struck his fancy; but his parents ignored this, and placed him in the office of a writer, with whom he completed the period of his engagement. At last his father consented to let him follow his own taste; and he proceeded to Edinburgh and placed himself under Sir William Allan, then the head of the Scottish Academy. Duncan's talent speedily developed, and soon outstripped all his competitors in the most difficult department—the drawing of the human figure.

His first picture that attracted public attention was the "Milk-

maid," and shortly after he exhibited "Old Mortality" and "The Braw Wooer." The exact drawing, fine feeling, and masterly execution of those early works gave high promise of future excellence. From this time his improvement was remarkable, insomuch as to secure to him the position of professor of colour in the Edinburgh Academy, and subsequently the chair of drawing in this school. In 1840 he sent to the Royal Academy of England his fine work, "Prince Charles Edward and the Highlanders entering Edinburgh after the battle of Prestonpans." The following year he exhibited a touching picture from the ballad of Auld Robin Gray, called "The Waefu' Heart," the next year "Deer Stalking," and in 1843 "Charles Edward asleep after the battle of Culloden, protected by Flora Macdonald." He was elected an associate of the Royal Academy in 1843. He died in May, 1845, at the early age of thirty-eight. Had his life been prolonged, he would have attained a high position in historic painting. As a colourist he had few superiors.

William Simson was born at Dundee in 1800, and received his education in art at the Trustees' Academy in Edinburgh. In the early part of his career, his works consisted mostly of small coast scenes, sketched on the shores of Leith and Fife. But, in 1829, he executed a large picture entitled, "The Twelfth of August;" the next year, "Highland Deer Stalkers," and "Sportsmen Regaling." After this, for some years he was engaged in portrait painting. In 1835, he visited Italy, where he remained three years. He returned in 1838, settled in London, and at the opening of the Royal Academy, in Trafalgar Square, exhibited two pictures. Amongst the long list of his works may be mentioned, "Mary Queen of Scots and her retinue returning from the chase to the Castle of Stirling," exhibited at the Royal Academy in 1841;" "The murder of the two Princes in the Tower," exhibited at the British Institution in 1842; and "The arrest of William Tell," which contains many figures. His works are characterised by imaginative power and excellent colouring; some of his portraits are very fine. He died in London in 1847.

Sir John W. Gordon was born in Edinburgh in 1788, and studied art at the Trustees' Academy, under Mr. Graham,[11] for four years.

[11] Graham is reported to have been a warm-hearted and kindly man, and it is evident that he was a very successful teacher of art; from the large number of his pupils who attained distinction, he seems to have had the faculty of arousing the enthusiasm of his scholars. He left some specimens of his own paintings in

His aspiration ran towards historic painting, and he worked in this line for some time; but finding that it would not pay, turned his attention to portrait painting. On the death of Sir William Allan, in 1850, Gordon was elected to succeed him as president of the Royal Scottish Academy. In short, at this time he was considered one of the foremost living portrait painters in Scotland. He produced many portraits, some of them of well-known public men. He died at Edinburgh in 1864.

William Dyce was born at Aberdeen in 1806; his father was a physician, and a fellow of the Royal Society. He was educated at Marischal College, and graduated M.A. at the age of sixteen. He afterwards studied art in the Edinburgh Academy; and before he was twenty, visited London, and became a probationer in the Royal Academy; but being dissatisfied with the method of instruction, he did not enter as a student. He proceeded to Rome, and studied from works of the Roman and Tuscan schools. In 1826, he returned to Scotland; but the following year he again visited Rome, and studied early Christian art. On returning home in 1830, he settled in Edinburgh, where he resided eight years. But having failed to obtain sufficient encouragement in historic painting, he had recourse to portraiture. He sometimes exhibited pictures at the Royal Scottish Academy, of which he was elected an associate in 1835.

In 1837, he published a pamphlet on the *Management of Schools of Design*, recently established by the Government, and in which he proposed a scheme for the improvement of the Trustees' Academy in Edinburgh. It presented a statement of perhaps the most complete scheme of art education then known in this country, which made him known to the Government. He was appointed superintendent and secretary to that branch of the Board of Trade which had charge of the new schools. Commissioned by the Government, he instituted a careful examination of the Continental systems of art instruction, and his report, with some modifications, was adopted as a text-book for several years. In 1842, he was appointed inspector of the

his "Death of General Fraser," and the "Death of David Rizzio." Graham was a North countryman, and was originally a coach-painter; nevertheless, by his teaching he gave a greater impulse to the culture of art in Scotland than any man of his time.

Another name deserves to be mentioned: James S. Stewart was born in Edinburgh in 1791, studied under Graham at the Trustees' Academy; and he became one of the most distinguished engravers of his time. He died at the Cape of Good Hope in May, 1863.

provincial schools, but he resigned this office in 1845. He lectured on the theory of the fine arts in King's College, London ; he is also the author of many essays on art and allied subjects.

His paintings are pretty numerous, and some of them are highly finished and greatly esteemed. He also executed decorative work in churches, and in some of the royal palaces. As an artist, his designs were well conceived, the attitude of his figures graceful, and the expression apt and pathetic. He died in 1864, in the fifty-eighth year of his age.

Sir George Harvey was born at St. Ninian's, near Stirling, in 1806. He was first apprenticed to a bookseller in Stirling, but he devoted his leisure hours to art. At the age of eighteen, he entered the Trustees' Academy in Edinburgh, where he studied two years. He was imbued with Puritan sentiments, and has done ample justice to that side of the national character, by depicting the earnestness and energy of the Covenanters. He produced his "Covenanting Preachers" in 1830 ; "Covenanters' Communion," 1840 ; "Sabbath Evening," 1841 ; and his "Battle of Drumclog," 1836, in which he represented, with remarkable effect, the aspects of a hand-to-hand struggle. In a different style his "Highland Funeral" appeared in 1844 ; and his "First Reading of the Bible in the Crypt of St. Paul's" in 1846, which among his many other successful pictures has been engraved. He was elected President of the Royal Scottish Academy in 1864. He died on the 22nd of January 1876.

Robert S. Lauder was born near Edinburgh in 1803, and early manifested a taste for art. He entered the Trustees' Academy in the year 1818, and prosecuted his studies for four years. After this, he went to London, and for three years practised drawing in the British Museum, and embraced every opportunity of improving his taste and knowledge. He returned to Edinburgh in 1826, and was elected an associate of the Royal Institution. In 1833, he visited the Continent, and remained abroad five years, the greater part of which he spent in Italy. He studied intently at Rome, Florence, Venice, and Bologna, returning in 1838, and afterwards residing in London till 1849.

In 1849, he exhibited his "Bride of Lammermoor" in the Royal Academy ; and subsequently exhibited other pictures which were readily purchased. The leading characteristics of his pictures which at once attract the eye, are his rich and tasteful colour, and admirable management of light and shade. He died on the 22nd of April 1869.

David Scott was born in Edinburgh in 1806. His father was a landscape engraver, and he learned the rudiments of his art from the prints, scraps, and sketches, lying in all corners of the house. While very young, he engraved illustrations for various works; and soon after turned his attention to painting. In 1832, he proceeded through France to Italy, where he visited every city in any way remarkable for its art collections. He stayed in Rome about a year, painted a number of small pictures, and one large picture entitled, "Family Discord—the Household God destroyed." He returned home in the spring of 1834, and the next year he was elected a member of the Royal Scottish Academy. The following are a few of his works:—"Nimrod the Mighty Hunter;" "Wallace defending Scotland;" "Mary Queen of Scots receiving her death warrant;" "Jane Shore found dead in the street;" "Merry Wives of Windsor, played before Queen Elizabeth;" "Christ in the Garden;" "Peter the Hermit addressing the Crusaders." Many of his other large pictures and also his small ones are representations and illustrations of very interesting subjects.

He also aspired to literary distinction. He is the author of a series of papers on the characteristics of the great masters of painting, which were published in *Blackwood's Magazine* in 1840. He also wrote a few pieces of verse and several tales. He died in the month of March, 1849.

Horatio MacCulloch was born in Glasgow in 1806, where he received his first instruction in painting from Mr. Knox, a landscape painter of some reputation. He was a diligent student of nature, as seen in the scenery on the banks of the Clyde, the Kelvin, the Cart, and the wilder regions of the Western Highlands. He afterwards removed to Edinburgh, and exhibited at the Royal Scottish Academy in 1829 "A View of the Clyde." His pictures readily obtained purchasers, and he was elected an associate of the Royal Scottish Academy in 1834, and a full member in 1838. He has long been recognised in Scotland as one of the leading painters of local scenery of his time. He died in 1867.

Alexander Johnston was born in Edinburgh in 1815; and studied art in the Trustees' Academy. He afterwards went to London, and studied under Hilton in the Royal Academy. He began pretty early to exhibit his pictures, and gradually attained a good position. In 1842 he exhibited at the British Museum his "Braw Wooers" and "The landing of Jeanie Deans at Roseneath," and "The Cove-

nanters' Marriage" at the Royal Academy. These were followed by other pictures handling Scottish subjects. In 1846 his "Prince Charles' introduction to Flora Macdonald after the battle of Culloden" appeared; the following year "The burial of Charles I. in St. George's Chapel," and "The abdication of Mary Queen of Scots" in 1855. His pictures are numerous, and mostly of a historic description.

Alexander Backley was born in Glasgow in 1816; and began his career in art when ten years of age by cutting out figures upon paper. In 1831 he commenced to study in the Trustees' Academy, and ten years later he studied a short time at the Royal Academy in London. He attained distinction as a portrait-painter, especially in portraiture of ladies and children. His principal oil-paintings are the "Opening of Parliament" and "The Ragged School."

Sir Daniel Macnee was born in 1806 in the parish of Fintry, Stirlingshire, but when an infant his father died, and, with his mother, he removed to Glasgow. At the age of twelve he was sent to learn drawing under John Knox, with whom he studied four years. Subsequently he was engaged by Dr. James Brown to execute large anatomical drawings for illustrating popular lectures. In 1824 he began to study at the Trustees' Academy at Edinburgh in the evenings; and two years later he exhibited chalk portraits in Edinburgh. He returned to Glasgow in 1830, and painted portraits and subjects of simple peasant life. He ultimately resolved to limit his efforts to portrait-painting; and he soon attained success. Many of his portraits were exhibited in Glasgow and Edinburgh. In 1876 he was elected President of the Royal Scottish Academy, and the following year he received the honour of knighthood. He then removed to Edinburgh, and continued to work assiduously. He painted rapidly, and frequently finished a head size in three sittings of about two hours each. His portraits are very numerous, and widely distributed in Scotland. He executed many portraits of ladies, some of which are remarkably good. The University of Glasgow conferred on him the honorary degree of LL.D. After a short illness, he died on the 17th of January, 1882.

John Phillip was born in Aberdeen on the 22nd of May, 1817, the son of humble parents. With very few external advantages he early manifested a genius for art, and at the age of fifteen produced pictures. Two years later he worked his way to London for the purpose of seeing the exhibition of the Royal Academy, and after a

brief stay there, which intensified his enthusiasm for art, he returned home. He continued to work in Aberdeen till 1837, when Lord Panmure lent him patronage, and he proceeded to London, and became a student in the school of the Royal Academy. In 1839 he again returned to Aberdeen, and painted portraits under local patronage, of which a number are still in the city. He removed to London in 1841, and regularly exhibited his pictures until 1851, when, owing to a severe illness, he visited Spain, where he stayed till 1856.

The influence of the new surroundings upon his active and plastic mind soon appeared in his works, and he painted a number of pictures illustrative of life and manners, of rare excellence. The first of these, entitled, "A visit to the Gipsy quarters," and the "Perlade Triana," were exhibited at the Royal Academy in 1853, and at once elicited admiration. These were followed by other paintings of great merit and value. He was elected an Associate of the Royal Academy in 1857, and a full Academician in 1859. Subsequently he exhibited two or three pictures annually at the Royal Academy in London, which readily found purchasers. In 1859 he executed for the Queen a picture representing the marriage of the Princess Royal with Prince Frederick William; which was engraved. He painted a successful picture of the House of Commons, which was also engraved.

His style is distinguished by remarkable intelligence and vigour, distinct conception, and fine perception of character. His flesh is admirable in modelling and for the healthy hue which it presents, while his colouring is rich, pure, and harmonious. He died in 1867, in his fiftieth year.

Personally, he was a man of high character and generous sentiments. It has been said that "he never put such high prices on his works as they might fairly have commanded," and it is evident that since his death the rise of the price of some of his pictures has been very great. A few instances may be given:—in 1860 his picture—"Scotch Baptism" was sold at £288 15s., in 1874 it was sold again at £1,755; in 1860 "Prison Window" was sold for £315, and in 1875 it brought £3,255; and in 1882 his picture, "A Church Porch," was sold for over £4,000. These prices are very significant.

Robert T. Ross was born in Edinburgh in 1816, and studied art at the Trustees' Academy under Sir William Allan. He painted por-

traits, and subjects mostly from domestic life. He was elected a member of the Royal Scottish Academy in 1869. He died in 1876.

Robert Thorburn was born at Dumfries in 1718, and educated at the High School of that ancient town. At the age of fourteen he was sent to study drawing at the Trustees' Academy, under Sir William Allan, in Edinburgh. In 1836 he proceeded to London, and entered as a student at the Royal Academy. Miniature portrait-painting seemed to him the quickest way of becoming known, and he adopted that branch of the art. He first exhibited his portraits at the Royal Academy in 1837, and his success was pretty rapid. His list of sitters soon numbered personages of the highest rank, including the Queen and the Prince Consort. In the latter part of his career he executed large portraits in oil and chalk. He died in 1885.

Joseph N. Paton was born in Dunfermline in 1823. As a painter he is original and imaginative, working chiefly in the historic region. Among the more successful of his works may be mentioned his "Dante meditating the episode of Francesca," 1852; "The Dead Lady," 1854; "The Pursuit of Pleasure," 1855; "Home—the return from the Crimea," puchased by the Prince Consort.

Erskine Nicol was born in Leith in 1825. He was intended by his parents for a commercial life, but his bent for painting was so keen that he chose rather to be apprenticed to a house-painter in Edinburgh, and occupied his leisure hours as a student of the antique at the Trustees' Academy. After completing his apprenticeship, he applied for the post of drawing-master in the Leith High School, which he obtained, and he then earnestly prosecuted his art studies. Afterwards he went to Dublin, where he remained three years, teaching and painting portraits. And it was then that he gained his insight of the every-day life and characteristics of the Irish people, from which he drew a series of pictures of a descriptive cast which were much admired and widely patronised. Many of his pictures have been engraved.

Robert Herdman was born in 1829 in the parish of Rattray, Perthshire, where his father was minister. He received a liberal education, and studied art at the Trustees' Academy in Edinburgh. Among his early efforts he painted some Scriptural subjects, and a portrait of his mother. In 1855 he visited Italy, and made drawings from the paintings of the old masters in the Italian galleries. After he returned home, he exhibited at the Royal Academy a number of pictures from Italian subjects. He was elected a member of the

Royal Scottish Academy in 1863; and he contributed to the exhibitions of the Academy nearly two hundred pictures. Among the more notable of his pictures are "After the Battle," a Covenanting scene; the "Captive of Lochleven," and the "Conventicle Preacher before the Court," which is an admirably realised and well-executed work. Some of his other historic pictures are the "Conference between Mary Stuart and John Knox at Holyrood," and "Prince Charles Edward seeking shelter in the house of an adherent." He had a strong feeling for historic subjects, and he sometimes drew upon Scottish song for his characters. He was an eminent portrait-painter, executing a large number of portraits of distinguished men and ladies. Personally he was a man of fine sensibility and an amiable genius. He died suddenly on the 10th of January, 1888, in his fifty-ninth year.

George P. Chalmers was born in Montrose in 1836, where he received the rudiments of education. He studied art at the Trustees' Academy in Edinburgh, and worked carefully and assiduously, and by persistent effort he attained a fine artistic style. He was gifted with keen imaginative and realistic powers, which gave high promise of eminence. He executed a number of admirable paintings, both in portraiture and landscape, and was elected a member of the Royal Scottish Academy in 1867. But his career was suddenly terminated by an accident which resulted in his death in February, 1878, in his forty-second year.

William B. Scott, a brother of David Scott, was born in Edinburgh, and studied under Sir William Allan in the Royal Academy. He afterwards settled in London, where his pictures were exhibited at the Royal Academy for a long series of years. He was for many years director of the Newcastle Government School of Art; and gradually his reputation became widely known. He produced a series of eight large pictures, original in design and vigorously executed, illustrating the history of Northumberland, for Sir W. C. Trevelyan, Bart., to decorate Wellington Hall. This series was exhibited at the French Gallery in London in 1861. He also occasionally occupied his attention with literature, wrote and published a biography of his brother David, some pieces of poetry, and several other writings. He died on the 22nd of November, 1890.

The names of Scottish painters noticed in this section forms a pretty long list, but it should be understood that it is not presented as an exhaustive one; enough, however, has been adduced to show

that the culture of painting and art had made considerable progress in Scotland during this period, and especially in the present century. It may be observed, too, that in this branch, as in many other departments, Scotsmen have contributed something to the richness of English Art; and if they have learned something from the south side of the Tweed, they have done more than repaid it.

In the last century some indications of a revival of sculpture appeared in Scotland, though little progress was made till the present century. Thomas Campbell was born in Edinburgh on the 1st of May, 1790. Originally he was a marble-cutter. Carving a chimney-piece in the house of Gilbert Innes of Stow, this gentleman was much pleased with his intelligence and promise, and gave him means to enable him to prosecute the study of sculpture. He went to London, and attended the classes of the Royal Academy. In 1818 he proceeded to Rome, where he studied for several years. He ultimately attained distinction, and received many commissions. He worked both in bronze and in marble, and executed many statues, and also busts. Among his works may be mentioned:—a marble statue of the Duke of Wellington, a statue of Queen Victoria at Windsor Castle, and the granite statue of the fifth Duke of Gordon at Aberdeen.

Laurence Macdonald was born at Boneybrow, Findo-Gask, in Perthshire, on the 15th of February, 1799. In the winter of 1822 he studied for a short time at the Trustees' Academy in Edinburgh. The same year he went to Rome, where he studied earnestly, and executed several busts. In 1826 he returned to Edinburgh, and executed busts of Professor John Wilson and George Combe, the phrenologist. He produced many busts; and in 1829 he exhibited his works in the Royal Academy, and the Royal Institution, Edinburgh. He returned to Rome in 1832, where he held a leading position as a sculptor, chiefly in executing portrait busts. He executed a bust of Sir Walter Scott. He died on the 4th of March, 1878.

Sir John Steel was born in Aberdeen in 1804, a son of a wood-carver. He early manifested a taste for sculpture, in which he eventually attained distinction. He settled in Edinburgh, and executed many fine statues and busts. He died on the 15th of September, 1891.

William Brodie was born in 1815. He was a distinguished sculptor, highly gifted with fine ideal and realising powers. He was a remarkably quiet and unassuming man. He died in Edinburgh in 1881. His brother, Alexander Brodie, born in 1829, was also a sculptor of

promise. His chief work was a marble statue of Queen Victoria, which he executed for the city of Aberdeen. He died in 1867, at the age of thirty-eight.

Henry B. Smith was born in Aberdeen in 1857. He executed a considerable number of small busts in marble. His chief work was a bronze statue of Burns, which was unveiled in Aberdeen on the 17th of September 1892. He was a sculptor of great promise. He died on the 16th of April 1893, at the early age of thirty-six.

In short, the progress of art in Scotland is one of the most striking facts in the recent history of civilisation. The chief cities have their academies, institutes, and schools of art, galleries and museums; and even many of the smaller towns show their appreciation of art in many ways. Let us hope that the culture of art, in all its branches, shall be still more widely diffused in the future than it has been in past; that the resources of elevated feeling and refined enjoyment may continue to be opened and expanded.

CHAPTER LI.

Political and Social Movements.

THE scope of this chapter naturally assumes a somewhat general character, as the course of political events in Scotland was greatly influenced by external power and circumstances; she had not a government of her own, and even the spirit of the British Ministry often seriously affected the executive in Scotland during the latter part of the last century, and the early part of this one. I will, in the first place, indicate briefly the political state of the nation in the later part of the eighteenth century; and in the second, touch on the rise of political discussion, of the principles of liberty and freedom, political rights, and reform; the attempts to suppress them, and their ultimate triumph.

In the last century there was no popular representation in Scotland. The town councils elected the burgh members of parliament. Excepting Edinburgh, which had a member to itself, there was only one member for a district of four or five burghs: for instance, Perth, Dundee, St. Andrews, Cupar, and Forfar, were classed together, and had but one member; Aberdeen, Montrose, Arbroath, Brechin, and Inverbervie, formed another group, with one member of parliament, and so on amongst the other burghs. The mode of election was this:—Each town council elected a delegate, and these five or four delegates met and elected the member of parliament. And it is a well ascertained fact, that the Governments of the day, instead of bribing the town councils, bribed the delegates, or, for the sake of economy, only one or two of them, if this could secure a majority. Such was the representation of the burghs of Scotland prior to 1832.

I have examined the rolls of the freeholders or electors of the different counties of Scotland, as made up at the meetings for electing their representatives to the Parliament, summoned to meet at Westminster on the 10th of August, 1790, and find that the total number of electors was then 2652. So in those days it was an easy matter for the Government to manage the elections as they thought fit. The public press was only in its infancy, and a pretty hard struggle had to be fought ere it obtained freedom of discussion. Corporations and public bodies might speak for themselves, but the

opinion of the general community was not recognised as having any claim to be heard or consulted. The Government of those days recognised no public opinion save that which issued from themselves or their official organs. So long as the mass of the people plodded on quietly at their daily occupations, the corruption of the political fabric was concealed behind its official trappings; but when the French Revolution burst out, it sent a shock of alarm and panic into the heart of every Government in Europe.

The effects of this soon appeared in the administration of Scotland. The terror of revolution seized the British Government; reason itself shook, and justice and humanity were for a time driven beyond the gates of mercy. Everything rung with the French Revolution, which was made the all in all for about twenty years. "Everything, not this or that thing, but literally everything, was soaked in this one event."[1] Although there is no evidence that any considerable number of persons in Scotland ever embraced the French revolutionary principles, there were, of course, many people who wished to reform the existing political system of government. But the reigning Toryism of the time, in order to retain its monopoly of power, fixed upon all reformers and opponents the stigma of Jacobins, revolutionaries, and seditious persons. The real Whigs were then very few in Scotland, and they were viewed by the Government and its supporters with extreme suspicion; even such a man as Dugald Stewart was an object of great secret alarm for several years. When such was the feeling in Edinburgh, we may easily imagine what must have been the position of men who held liberal opinions in the country at large; still, such persons existed throughout the nation, but were subjected to contumely, insult, and personal loss and danger for many years.

In the end of the year 1792, some attempts were made to form political associations; and in December, a meeting of delegates was held in Edinburgh, some of whom had come from Ross and Sutherlandshire. The Lord Advocate, Dundas, immediately set the arm of the law in motion, and the most notable and talented man connected with the movement, Thomas Muir, was arrested on the 2nd of January, 1793, but was liberated on bail.[2] After instructing his legal

[1] Lord Cockburn's *Memorials of his Time*, p. 80; 1856.

[2] Mr. Muir was born in Glasgow in 1765, and educated at the Universities of Glasgow and Edinburgh. Having chosen the legal profession, and studied law, he was called to the Scottish bar in 1787. He was a man of high intellectual abilities, and an ardent advocate of political reform.

agent to inform him whenever a criminal indictment was served upon him, he proceeded to France. His trial was finally fixed on the 25th of February; but Muir failed to reach Edinburgh on the day fixed for his trial, accordingly he was declared an outlaw, and his name deleted from the roll of the Faculty of Advocates. He returned to Scotland in July, and was at once apprehended; and on the 30th he was brought before the Court and charged with sedition. The indictment was of enormous length—a curious mass of legal verbiage; but the chief point in it was that the prisoner at the bar was connected with political associations, whose sole end was to agitate for parliamentary reform. Braxfield, then Lord Justice-clerk, was the leading spirit in this trial, and in the other political trials of the period; and it has long since been admitted that he was notoriously prepossessed and prejudiced against all persons charged with political crimes.[3] The juries were usually packed in these trials, and there was not only a bias against such prisoners, but also an absolute straining for convictions was manifested by the bench; nothing so

[3] "But the giant of the bench was Braxfield. His very name makes people start yet. Strong built and dark, with rough eyebrows, powerful eyes, threatening lips, and a low growling voice, he was like a formidable blacksmith. His accent and his dialect were exaggerated Scotch; his language, like his thoughts, short, strong, and conclusive."

"It is impossible to condemn his conduct as a criminal judge too gravely, or too severely. It was a disgrace to the age. A dexterous and practical trier of ordinary cases; he was harsh to prisoners even in his jocularity, and to every counsel whom he chose to dislike. . . . It may be doubted if he was ever so much in his element as when tauntingly repelling the last despairing claim of a wretched culprit, and sending him to Botany Bay or the gallows with an insulting jest; over which he would chuckle the more from observing that correct people were shocked. As he once said to an eloquent culprit at the bar: 'Ye're a verra clever chiel, man, but ye wad be nane the waur o' a hanging.' Hang was his phrase for all kinds of punishment. . . . He, as the head of the Court, and the only powerful man it contained, was the real director of its proceedings. The reports make his abuse of the judgment-seat bad enough; but his misconduct was not so fully disclosed in formal decisions and charges as it transpired in casual remarks and general manner. 'Let them bring me prisoners, and I'll find them law' used to be openly stated as his suggestion when an intended political prosecution was marred by anticipated difficulties. . . . Mr. Horner, one of the jurors, in Muir's case, told me that when he was passing behind the bench to get into the box, Braxfield, who knew him, whispered, 'Come awa, Maister Horner, come awa, and help us to hang ane o' thae daamned scoondrels.'"—Lord Cockburn's *Memorials of his Time*, pp. 113-117.

grossly unjust had taken place in Scotland since the seventeenth century.

Muir admitted that he had agitated concerning the representation of the people in parliament, but denied having used seditious language or disseminated seditious literature. The judges were prepossessed against him, the jury was packed, and there was little hope for the prisoner at the bar; nevertheless, Muir addressed the jury in a memorable speech, which occupied three hours in its delivery. When he concluded, a shout of applause was raised by the audience in the gallery and the passages of the court, the echo of which is not even yet spent. In vain Lord Braxfield shouted "Clear the court," and he then said, that this applause which the prisoner had received had only confirmed his conviction that it would be dangerous to allow Muir to remain in the country. He next concentrated all his powers, and rose to sum up and address the jury, and amongst other and equally remarkable things, his lordship said:—

"This is the question for consideration. Is the panel guilty of sedition or is he not. Now, before this question can be answered, two things must be attended to that require no proof. First, that the British Constitution is the best that ever was since the creation of the world, and it is not possible to make it better. For is not every man secure? Does not every man reap the fruit of his own industry, and sit safely under his own fig tree? The next circumstance is that there was a spirit of sedition in this country last winter which made every good man uneasy. Yet Mr. Muir had at that time gone about among ignorant country people, making them forget their work, and told them that a reform was absolutely necessary for preserving their liberty, which, if it had not been for him, they would never have thought was in danger. I do not doubt that this will appear to the jury, as it does to me, to be sedition.

"The next thing to be attended to is the outlawry. Running away from justice—that was a mark of guilt. And what could he do in France at that period? Pretending to be an ambassador to a foreign country without lawful authority, that is rebellion; and he pretends to have had influence with those wretches, the leading men there. And what kind of folks were they? I never liked the French all my days, and now I hate them. The panel's haranguing such multitudes of ignorant weavers about their grievances might have been attended with the worst consequences to the peace of the nation and the safety of our glorious Constitution. Mr. Muir might

have known that no attention could be paid to such a rabble. What right had they to representation? I could have told them that the parliament would never listen to their petition. How could they think of it? A government in every country should be just like a corporation, and in this country it is made up of the landed interest, which alone has a right to be represented. As for the rabble, who have nothing but personal property, what hold has the nation of them? What security for the payment of their taxes? They may pack up all their property on their backs and leave the country in the twinkling of an eye, but landed property cannot be removed." [4]

Muir, as a matter of course, was found guilty, and sentenced to transportation for a period of fourteen years. Other persons were tried this year and the following one for similar offences, and every one of them for a first offence were sentenced to transportation. Amongst those were Gerald, Hargarot, and Palmer. Political discussion and political meetings were completely suppressed for a considerable time in Scotland. But these trials left a deep impression upon the popular mind, and on the minds of all thinking men. In 1844, a stone monument was erected to their memory on the Calton Hill burying ground, Edinburgh.

The Government employed a set of spies, who often brought innocent and unsuspecting persons into the iron grasp of the criminal law. After the trials of 1793 and 1794, the Government seems to have imagined that Glasgow was the chief revolutionary centre in Scotland, although, in fact, there was no such thing in the nation, save what the Government itself was creating. When any Government purposely employs and pays men to discover sedition among a peaceful community, these men, in the interest of their trade, will soon create a show of the article required by their employers. This was what occurred in Glasgow between 1816 and 1820; that there was distress, and consequently discontent, in Glasgow, is well-known; but that there was anything like an organised conspiracy against the Government there is no evidence whatever.

By the operations of the spies and paid agents of the Government, three or four men were arrested and imprisoned in the Castle of Edinburgh in 1816, where they were kept for a considerable time. When the trial of these men began, it at once became evident that the whole affair had been manufactured to order; and it was shown in open court that the Advocate-depute had tampered with a witness,

[4] *The Martyrs of Reform in Scotland*, by A. H. Millar, F.S.A. Scot.

and endeavoured to corrupt him. The trial broke down, and "the prison and castle gates were instantly opened, and all the kindred prisoners walked forth."

But in the year 1820, three men, Hardie, Baird, and Wilson, were executed for political offences which they were led into by the agents of the Government of the day; and other fifteen men were, at the same time, and for the same offence, sentenced to transportation.

Liberal principles in politics, and freedom of discussion, slowly advanced in Scotland; and incidents occasionally happened to convince the party in power that they were not quite immortal. The younger class of Whigs, represented by the *Edinburgh Review*, fought bravely and effectually, and by and by the clouds began to disperse, and the political atmosphere became clearer. The calm and reasonable teaching of Adam Smith and of Dugald Stewart had begun to tell; the press, too, was beginning to gather some influence; but the most powerful wave which was rapidly increasing in volume and momentum issued from the commercial and trading class. The wealth of this class was increasing, and it was them especially which rendered the first Reform Bill, not a matter of choice to be decided by this or that party, but a matter of absolute necessity. The new bill, therefore, gave this class power, and free trade won the day; but, though this great measure of reform swept off innumerable abuses, and introduced a better system of representation, it was far from satisfactory. The body of the people were still left outside the Constitution, and outside the legislature; they had no vote or voice in the government of their country. Hence, agitation for political reform, instead of being abated, shortly became more general and intense than it had ever before been, and the Chartist movement arose.

As might have easily been foreseen, the Chartist movement commenced almost immediately after the passing of the Reform Bill. They were, however, more troublesome in England than in Scotland. Their programme of reform was enounced in distinct terms and published to the world, and consisted of the following points:—(1) Universal Suffrage; (2) Vote by Ballot; (3) Annual Parliaments; (4) Payment of Members; (5) Abolition of the Property Qualification; and in 1848, they adopted the principle of equal electoral districts or proportionate constituencies. The more important of these points have already been embodied in the political system of the country;

and the Chartists are, therefore, entitled to be considered as the real and only fruitful political reformers since 1833. From about 1843 to 1851, they had associations, clubs, and meeting-houses in Scotland; and many of their lecturers travelled through the country and delivered speeches at public meetings in the centres of population. One of their last meetings was a Democratic Conference, held in Edinburgh, in 1852.

In fact, many of the workmen in the chief towns of England: Manchester, Birmingham, Nottingham, Newcastle, and the chief seats of industry in Lancashire and Yorkshire, as well as in the chief towns of Scotland, were extremely disappointed with the Reform Bill of 1832; as it was merely drawn to admit the commercial and middle class to political rights and power. So the cry for political reform was continued; and one responsible statesman ventured, about 1862, to announce that, in his opinion, the time had arrived when an extension of the franchise might safely be made. The announcement was received by many of the organs of public opinion with utter amazement, and by some it was treated with scorn and contempt. But shortly after the death of Lord Palmerston, the subject of representative reform was taken up by Earl Russell's Administration, and in the spring of 1866, a measure called "The Representation of the People Bill" was introduced in parliament. It proposed a £7 franchise for burghs, and some other forms of qualification for a vote; the Government, a little later in the session, also introduced "The Redistribution of Seats Bill;" but, properly speaking, the two halfs were intended to form one measure. The whole measure was fiercely assailed in its principle and its details by Mr. Robert Lowe, then member for the burgh of Calne. In the course of the debates on the measure, he delivered three or four powerful and long speeches against it; in one of which his peroration was as follows:—

"I have said that I am utterly unable to reason with the Chancellor of the Exchequer for want of a common principle to start from; but there is happily one common ground left to us, and that is the second book of the Æneid of Virgil. My right honourable friend, like the moth which has singed its wings in the candle, has returned again to the poor old Trojan horse, and I shall, with the permission of the House, give them one more excerpt from the history of that noble beast. . . . The passage which I am about to quote is one which is, I think, worthy the attention of the House, because

it contains a description not only of the invading army of which we have heard so much, but also a slight sketch of its general :—

> 'The fatal horse pours forth the human tide,
> Insulting Sinon flings his firebrands wide—
> The gates are burst ; the ancient rampart falls,
> And swarming millions climb its crumbling walls.'

I have now traced, as well as I can, what I believe will be the natural results of a measure which, it seems to my poor imagination, is calculated, if it should pass into law, to destroy one after another, those institutions which have secured to England an amount of happiness and prosperity which no country has ever reached, or is ever likely to attain. Surely the heroic work of so many centuries, the matchless achievements of so many wise heads and strong hands, deserve a nobler consummation than to be sacrificed at the shrine of revolutionary passion, or the maudlin enthusiasm of humanity! But, if we do fall, we shall fall deservedly. Uncoerced by any external force, not borne down by any internal calamity, but in the full plethora of our wealth and the surfeit of our too exuberant prosperity, with our own rash and inconsiderate hands, we are about to pluck down on our own heads the venerable temple of our liberty and our glory. History may tell of other acts as signally disastrous, but of none more wanton, none more disgraceful."

A considerable number of the Liberal members followed Mr. Lowe in his opposition, and on a division the measure was thrown out ; and Earl Russell's ministry resigned. The country was soon in a flame of agitation. Demonstrations in favour of parliamentary reform were held in every city and town of any importance throughout Scotland. This time the manifestations were determined and unmistakable, and it was seen that longer resistance to the united voice of the people was hopeless. Accordingly, the Conservatives introduced a Reform Bill, which, as every one knows, was worked into form by the Opposition in committee, and in its reamended state finally passed. But I have perhaps come down far enough, and shall only observe that at present a single division of Lanarkshire or of Aberdeenshire contains twice as many voters as all the counties of Scotland put together had at the end of the last century.

At the beginning of the present century, the position of the working classes with respect to civil, municipal, and political rights were very different from the status in which they now stand. In short, as we have seen, the people had no political rights, nor political

freedom, till a recent period. The struggle to obtain those rights was a long and severe one; but various influences and circumstances have contributed to place the people in the commanding position which they at present enjoy.

The gradual diffusion of education and intelligence, and organisation and association among themselves for mutual benefits and ends, have done much to advance the body of the people. Trades unions have been viewed from very different standpoints; but without entering into a discussion or endless details, by attempting to justify the principles and the action of those unions in all the varied directions of their operation, I take them as a whole, and consider their results. When the liberty of the subject was so restricted that it was a crime to unite or associate for mutual benefits and ends, the effect of this was that Trades Unions in the early part of the present century were unlawful associations, and treated as such. Now injustice always begets injustice in some form. It is not surprising, therefore, that in their early stages trades unions were not always reasonable and fair in their proceedings. The Combination Laws were only partly repealed in 1825.

Upon the lines just indicated, there can be no doubt that those unions have done a vast amount of good. They have enabled workmen in some degree to hold their own, to obtain equal justice, and civil and political rights. In short, in the intense struggle of competition during the last fifty years, workmen could not have existed without their unions.

CHAPTER LII.

Ecclesiastical Movements.

THE aim of this chapter is mainly expository. It will, therefore, proceed on the fundamental conceptions and principles of the polity of the Presbyterian Church of Scotland. In the first place it will touch on the original conception of this polity; in the second, the effect of external power and circumstances upon it; and third, the modifications which it has undergone.

The conceptions of the Scotch Reformers were not elaborated at once: religion and secular government were often mixed in the early stages of the Reformation. A Church distinct from and independent of the State was a conception quite alien to the forms of thinking which prevailed among the Reformers; on the other hand, a secular government distinct from and independent of the Church was an idea scarcely entertained by any statesmen of the sixteenth or seventeenth centuries. Both the Church and State held the common notions of theocracy, as being both under the direction of God, should therefore be associated. In itself the theocratic idea is grand and inspiring in contemplation. But in practical operation it appears that the Church and State both claim a supremacy; and they often hold very different views as to what is the will of God, or how far and in what circumstances the Word of God should be followed. The King may maintain that he alone under God has a supremacy of power over the Church and everything else within his kingdom, as was done by James VI., Charles I., Charles II., and James VII., in Scotland. Whoever wishes to understand the Church of Scotland and her many struggles should form a clear conception of this theocratic principle, as it is the key of the history of Presbyterianism in this country.

According to the authoritative and historic polity of the Church, the doctrine of the spiritual and civil powers were as follows:—"This power and ecclesiastical polity is different and distinct in its own nature, from that power and polity which is called the civil power, and belongs to the civil government of the commonwealth; albeit, they are both of God, and tend to the same end, if they be rightly

used—namely, to advance the glory of God and to have godly and good subjects. This power ecclesiastical flows immediately from God and the Mediator, Christ Jesus, and is spiritual, not having a temporal head in earth, but only Christ, the only spiritual King and Governor of His Church. Therefore this power and polity of the Church should lean upon the Word of God immediately, as the only ground thereof, and should be taken from the pure fountains of the Scriptures, hearing the voice of Christ, the only spiritual King, and being ruled by His laws. . . . Notwithstanding, as the ministers and others of the ecclesiastical estate are subject to the civil magistrate, so ought the person of the magistrate in spiritual matters to be subject to the Church and in ecclesiastical government.

"The civil power should command the spiritual to exercise and perform their office according to the Word of God. The spiritual rulers should require the Christian magistrate to administer justice and punish vice, and to maintain the liberty and quietness of the Church within their bounds. . . . The magistrate ought neither to preach, minister the Sacrament, nor execute the censures of the Church, nor yet prescribe any rule how it should be done, but command the minister to observe the rule commanded in the Word of God, and punish the transgressors by civil means. The ministers do not exercise civil jurisdiction, but teach the magistrate how it should be exercised according to the Word. The magistrate ought to assist, maintain, and fortify the jurisdiction of the Church. The ministers assist their princes in all things agreeable to the Word, provided they do not neglect their own charge by involving themselves in civil affairs.

"So it appertains to the office of the Christian magistrate to assist and maintain the discipline of the Church, and to punish them civilly that will not obey the censures of the Church; to make laws and constitutions agreeable to the Word, for the advancement of the Church and her polity, without usurping anything that does not belong to the civil sword."[1]

It is obvious that this theory of the spiritual and civil powers is grounded upon the assumption that the State and the Church ought to assist each other and runs on lines of a co-ordinate jurisdiction. As to supremacy in the case of the Church, the final appeal is distinctly placed upon the Word of God and Christ Jesus, the spiritual Head and King; in other words, it is a distinct development of the

[1] *Second Book of Discipline.*

theocratic conception. The ideas involved in the theory are irreconcilable in practical operation, unless under peculiar conditions and circumstances of society.

Touching the election of ministers to congregations, it is explicitly and repeatedly stated that great care should always be taken not to intrude any minister on a congregation, if they are not satisfied with him. Hence, lay patronage was throughout inconsistent with the conception and fundamental principles of this Church; and she opposed and rejected it, and fought against it.

Having now stated the original grounds out of which the struggles between the Government and the Church arose, which have been explained at length in the preceding volumes of the work, it may be remarked that patronage was abolished shortly after the Revolution, but again restored by the British Government in 1712. After this the struggles of the Church of Scotland were mainly internal; but they still sprang from the conceptions and theory of the powers of the Church. The ideas, sentiments, and feelings engendered by many long years of severe persecution continued to be represented in the Assemblies and Courts of the Church with more or less vigour; hence, an internal struggle arose between the party who held firmly to those ideas and views and the new or more modern party—called, in ecclesiastical history, the Moderate party. At first the difference between the two parties was not great; but about the middle of the eighteenth century the opposite views of the popular and Moderate parties in the Church Courts and throughout the country had become distinct and irreconcilable.

The chief practical point of polity in dispute was the settlement of ministers in parishes against the wishes and the expressed determination of the congregations. Cases of this character were constantly coming before the presbyteries and the General Assemblies; and in 1733 it was upon matters which arose out of such cases that a secession from the church then took place. Ebenezer Erskine, minister of Stirling, was a vehement advocate of popular election, and in his sermon at the opening of the Synod in the autumn of 1732, he said:—"There is a twofold call necessary for a man's meddling as a builder in the Church of God: there is the call of God and of His Church. God's call consists in qualifying a man for His work; inspiring him with a holy zeal and desire to employ those qualifications for the glory of God and the good of His Church. The call of the Church lies in the free choice and election of the Christian people. The promise of conduct and counsel in the choice of men that are to

build is not made to patrons, heritors, or any other set of men, but to the Church, the body of Christ, to whom apostles, prophets, pastors, and teachers are given. As it is the natural privilege of every house or society of men to have the choice of their own servants or officers, so it is the privilege of the house of God in a particular manner. What a miserable bondage would it be reckoned for any family to have stewards or servants imposed on them by strangers, who might give the children a stone for bread, or a scorpion instead of a fish, or poison instead of medicine? And shall we suppose that ever God granted a power to any set of men, patrons, heritors, or whatever they be—a power to impose servants on His family, without His consent, they being the freest society in the world? . . A cry and complaint came in before the bar of the last Assembly for relief and redress of these and many other grievances, both from ministers and people. But instead of a due regard had thereunto, an act is passed confining the power of election unto heritors and elders, whereby a new wound is given to the prerogative of Christ and the privileges of His subjects. . . . Only allow me to say, that whatever Church authority may be in that act, yet it wants the authority of the Son of God. All ecclesiastical authority under heaven is derived from Him; and, therefore, any act that wants His authority has no authority at all."

Erskine was rebuked by the Synod, and by the General Assembly, for the sentiments uttered in this sermon; but he adhered to every word that he had said, and in Covenanting style protested at every stage of the proceedings taken against him, along with three of his brethren who adhered to him. They stood out boldly against every attempt of the Assembly to threaten or to flinch them; and, accordingly, at last they were turned out of their churches and manses in 1740. But several years before this they had formed themselves into a presbytery, and dissent continued to increase. In the year 1773, there were nearly two hundred dissenting congregations in Scotland, besides Episcopalians and Roman Catholics.

The question of patronage and the intrusion of presentees on reclaiming congregations still occupied much of the attention of presbyteries and the General Assembly. But, in 1752, a movement was inaugurated in the General Assembly which had for its object the enforcement of the law of patronage at all hazards; and the leader of it was Dr. Robertson, who, in the policy which he persistently followed, seemed to have attained a remarkable measure

of success, yet the wisdom of the course which he adopted may be questioned. His object was to enforce a strict and literal observance of patronage.[2] But what did this mean? It meant that one of the

[2] "Some friends and companions having been well informed that a great majority of the General Assembly, 1751, were certainly to let Mr. Adams, of Falkirk, the disobedient brother, escape with a very slight censure, a select company of fifteen were called together in a tavern, a night or two before the case was to be debated in the Assembly, to consult what was to be done. There met, accordingly, in the tavern the Right Honourable the Lord Provost Drummond; the Honourable William, Master of Ross; Mr. Gilbert Elliot, jun., of Minto; Mr. Andrew Pringle, advocate; Messrs. Jardine, Blair, Robertson, John Home, Adam Dickson of Dunse, George Logan of Ormiston, Alexander Carlyle of Inveresk, and as many more as made fifteen, two of whom, viz., Logan and Carlyle, were not members of the Assembly. The business was talked over, and, having the advice of two able lawyers, Messrs. Elliot and Pringle, we were confirmed, in our opinion, that it was necessary to use every means in our power to restore the authority of the Church, otherwise her government would be degraded, and everything depending on her authority would fall into confusion; and although success was not expected at this assembly, as we know that the judges, and many other respectable elders, besides the opposite party of the clergy, were resolved to let Mr. Adams and the disobedient Presbytery of Linlithgow escape with an admonition only, yet we believed that, by keeping the object in view, good sense would prevail at last, and order be restored. We did not propose deposition, but only suspension for six months, which, we thought, was meeting the opposite party half way. John Home agreed to make the motion, and Robertson to second him. . . . Home made a spirited oration, though not a business speech, which talent he never attained. Robertson followed him, and not only gained the attention of the Assembly, but drew the praise of the best judges . . . whom I overheard say, that Robertson was an admirable speaker, and would soon become a leader in the Church courts."—*Autobiography of the Rev. Dr. Alex. Carlyle*, pp. 246-248.

"It was in the Assembly of 1752 that the authority of the Church was restored by the deposition of Gillespie. Robertson and John Home, having been dissenters, with some others, from a sentence of the Commission in March that year in the affair of Inverkeithing, gave them an opportunity of appearing and pleading at the bar of the Assembly, which they did with spirit and eloquence. The minds of the leaders of the Assembly having been now totally changed, a vigorous measure was adopted by a great majority. The presbytery of Dunfermline were brought before the Assembly, and peremptorily ordered to admit the candidate three days after, and report to the Assembly on the following Friday. They disobeyed, and Mr. Gillespie was deposed. . . . At a general meeting of the party, after Gillespie was deposed, it was moved that it would be proper to propose next day that the Assembly should proceed to depose one or two more of the offending brethren. Mr. Alexander Gordon of Kintore, and George Logan, and I, were pointed out as proper persons to make

fundamental principles of Scotch Presbyterianism was to be extinguished. It also assumed that the opinions and sentiments of the people with regard to this principle could be suppressed by decrees of the General Assembly, forgetting that the people had fought and bled in opposing patronage for a period of nearly two centuries. In short, taking all the facts and circumstances in connection with patronage into account, it would have been a wiser policy, and more worthy of Robertson's historic mind, if he had employed his talents and influence to abolish patronage. Dr. Robertson's ecclesiastical policy had a deadening tendency, inasmuch as those who followed it had no higher principle than that of a cringing allegiance to patrons, so his party lost the confidence and the respect of the people because they had cast off the historic glory of their Church. The descent of the majority of the Scotch clergy in the last half of the eighteenth century was remarkable; their earnestness, spirit, and abilities, faded. Dr. Robertson retired from the management of ecclesiastical affairs in 1780.

In 1781 the Synod of Glasgow and Ayr presented overtures to the General Assembly touching patronage, which insisted that no call should be sustained unless it was signed by a majority of the heritors, elders, and communicants of the parish. But the Assembly dismissed this proposal because it was of a dangerous tendency. The Synods of Dumfries, Perth, and Stirling overtured the Assembly to state explicitly what was meant by a call, but these, too, were simply dismissed. The following year the Synods of Glasgow and Ayr, Perth and Stirling, Fife, Galloway, Lothian, and Tweeddale, unitedly appeared before the Assembly and stated that several presbyteries had recently inducted ministers without the moderation of a call, and prayed the Assembly to prohibit such proceedings in the future. Dr. George Hill, who had then assumed the leadership of the Moderate party, opposed the prayer of the synods, and said that the Assembly might at once dismiss the overtures; but to quiet the minds of the people, and prevent persons from spreading an opinion that the Church was

and second the motion. I accordingly began, and was seconded by Gordon in a vigorous speech, which occasioned great alarm on the other side, as if we were determined to get rid of the whole Presbytery; but this was only *in terrorem*, for by concert, one of our senior brethren proposed that the Assembly should rest content with what they had done, and this was carried."—*Ibid.*, pp. 255-256.

Another secession sprang from Gillespie's deposition, which soon increased in numbers.

deserting her Presbyterian principles, he moved that the Assembly should declare that the moderation of a call was the immemorial practice of the Church, and dismiss the overtures as unnecessary. Another eminent Moderate, Dr. Macknight, then moved that the resolution should be: "The Assembly, having considered overtures, declare that the moderation of a call in settling ministers is agreeable to the immemorial practice of the Church, and ought to be continued." The popular party voted for this motion, and it was carried; but as to what constituted a call was left undefined. Again, in 1783, the synods of Perth, Stirling, and Fife brought this point before the Assembly; the kingdom of Fife was stamped with the spirit of Melville, and never deserted the popular cause. They implored the Assembly to make the utmost efforts to get the Act of 1712 repealed and the Act of 1690 restored. The Moderate party wanted to throw out the overtures without a debate; but the popular party proposed that Presbyteries should be instructed to consult with the landed gentry within their bounds, and report the result to the next Assembly. In the debate, it was stated that the aversion of the people to patronage was invincible, and could never be overcome; but the proposal was defeated by a majority of nine. Once more, in 1784, the synods of Glasgow and Ayr, Perth and Stirling, appeared before the Assembly, praying for the removal of patronage. It was proposed that the landed gentry should be consulted touching the divising of some means to remedy this insufferable evil; but the Moderate party became enraged, and carried a motion declaring that the overtures were ill founded and dangerous to the welfare of the Church. They further declared that henceforth patronage was not to be considered as a grievance.

In spite of this resolution of the majority, the synod of Perth and Stirling and the presbytery of Dumfries again appeared before the Assembly of 1785, with overtures touching the repeal or alteration of the law of patronage. But it was of no avail, the overtures were rejected by a large majority. The popular party, though in a minority in the Assembly, were not in a minority among the people; as they wielded the greatest influence on the heart and soul of the nation.

A grand revolution was preparing, unlike anything which had before been evolved, insomuch that scarcely a man in the British Parliament could comprehend its principles or understand its end. The changed state and circumstances of society in Britain rendered

the original theocratic conception impracticable, while the original and fundamental principles of Presbyterianism were almost incomprehensible to politicians and lawyers beyond the Tweed. Hence their futile, and laughable efforts to check the evolution of the movement.

As an attempt to redress the evils involved in patronage, the popular party proposed in the General Assembly of 1833, that when a majority of a congregation objected to the minister presented by the patron, the presbytery of the bounds should not proceed with the settlement. The proposal was debated at great length; both parties exerted themselves to the utmost. At last Dr. Cook moved that the proposal should be approved, and a committee appointed to consider the best means of carrying it into execution; and this was carried by a majority of four. The Assembly of 1834 passed it into an Act; and the effect of the Act was simply this, that when a clear majority of the male heads of families, being members of the congregation, and in full communion with the Church, deliberately objected to the presentee's settlement as their minister, in that case the presbytery of the bounds should not proceed to thrust him upon the congregation. This famous regulation is elsewhere called "The Veto Act." It was on this simple and reasonable rule that the grand struggle which issued in the Disruption was fought. This was the hinge on which the conflict externally turned, although, of course, there were other principles involved in it.

The ultimate issue of such a conflict greatly depended upon the prevailing ideas touching the rights of man, as a reasonable and responsible agent, a free and social agent, a being not only accountable to external authorities, but also to his own conscience and to God. If the body of the people are merely conceived to exist for the convenience, pleasure, and glory of the privileged and ruling class, it follows as a consequence that the Church will be conceived and used as an instrument of the Government, as a mere prop of the power of the State. But to the credit of Scotland in the struggle under review, the first class of conceptions indicated above, gave such a manifestation of their vitality as astonished the British Government.

Without entering into many details, I shall present a summary of the leading steps in the revolution. For some time the Veto Act worked beneficially, and the internal discipline and order of the Church was improving. But self-interest and love of power are

strong and often blind motives; so it was determined to maintain patronage in its most rigorous and offensive form. In 1834 the Earl of Kinnoul presented Mr. Robert Young, preacher of the gospel, to the parish of Auchterarder, in Perthshire; and the presbytery of the district proceeded according to the usual forms to admit him; but only two of the parishioners signed his call, and therefore the presbytery could not settle him in the parish. The case, in due course, was brought before the Court of Session; and in March, 1838, a majority of the Lords gave judgment to the effect that the presbytery had acted contrary to the provisions of the statute of Queen Anne, of 1712. The General Assembly met in May, 1838, and the Rev. Robert Buchanan, of Glasgow, proposed a motion which affirmed the spiritual independence of the Church. It was opposed by Dr. Cook, who moved an amendment. But after a long and vehement debate, Buchanan's motion was carried by a majority of forty-one.

The collision between the Church and the civil power was begun in earnest, and could not continue long. The Auchterarder case was appealed to the House of Lords—the English Law Lords; and they came to the conclusion that the jurisdiction of the civil court, even in a matter which involves the spiritual act of ordination, is supreme, and must be obeyed; consequently, they affirmed the judgment of the Court of Session. This settled the point that the rejection of a patron's presentee, entirely on the ground of the dissent of the congregation, was illegal; but it also implied and involved the conclusion that the congregation had no legal standing at all in the settlement of their minister. Their simple and only duty in the matter was to submit quietly to whoever the patrons thought fit to place over them.

The General Assembly met on the 16th of May, 1839, and intimation of the grounds of the final struggle was given. Dr. Cook, the chief of the Moderate party, at once announced that he himself, and those who acted with him, had resolved to conduct the affairs of the Church in accordance with the decrees of the civil courts. Dr. Chalmers then intimated that he would submit some motion to the Assembly. The debates were long and animated. Dr. Cook insisted that the Veto Act, by the decisions of the courts, was rendered not an Act of the Church at all, as the Church had been acting under an error. Dr. Chalmers' motion was in effect that the Church bowed to the decision of the court so far as matters of civil rights were concerned, but

avowed that—"Whereas the principle of non-intrusion is one coeval with the reformed Kirk of Scotland, and forms an integral part of its constitution, embodied in its standards, and declared in various Acts of Assembly; the General Assembly resolved that this principle cannot be abandoned, and that no presentee shall be forced upon any parish contrary to the will of the congregation.

"And whereas, by the decision above referred to, it appears that when this principle is carried into effect in any parish, the legal provision for the sustentation of the ministry in that parish may be thereby suspended, the General Assembly being deeply impressed with the unhappy consequences which must arise from any collusion between the civil and ecclesiastical authorities, and holding it to be their duty to use every means in their power, not involving dereliction of the principles and fundamental laws of their Church constitution, to prevent such unfortunate results, do hereby appoint a committee for the purpose of considering in what way the privileges of the national establishment and the harmony between Church and State may remain unimpaired, with instructions to confer with the Government of the country."

This motion was finally carried by a majority of forty-nine, and a deputation from the committee appointed under it proceeded to London; but the Government then in office was weak. In short, the Government were never anxious to grapple with the different views which were taken of the operation of patronage, or to interfere by legislation on the limits and extent of the ecclesiastical power of the Church of Scotland. Then their almost utter ignorance of the real merits of the matters in dispute was another reason for the apathy of the British Government. So little were they aware of the true facts of the case, that they never dreamed of such an event as the Disruption.

The excitement in the country was rising fast. In the end of the year 1839, the seven rebellious ministers of the presbytery of Strathbogie were suspended, to prevent them from proceeding with the settlement of Mr. Edwards in the parish church of Marnoch, to which he had been presented several years before, it became manifest that the crisis was approaching its issue. The seven suspended ministers placed their faith upon the Court of Session, and in that quarter they showed great energy. They obtained first an interdict to prevent the minority of the presbytery, and all others, from using the church, churchyard, and school-house, in executing the sentence

which the commission of the General Assembly had pronounced. They next obtained a formal warrant from the Court of Session for continuing in the exercise of the ministry themselves: and in moving this Lord Gillies said that "it appeared to him that the position which the non-intrusion party of the Church of Scotland had taken up in opposition to the established law of the country was the most arrogant that any established Church had ever attempted." The second interdict also prohibited all the individual ministers, from various parts of the country, who had been appointed by the commission to execute the sentence of suspension, from even intruding into their parishes; but this part of the interdict was disregarded. Many ministers from the south and west entered into the presbytery of Strathbogie and preached on the turnpike roads and in the fields to vast crowds of the people, published the sentence of suspension, expounded the principles then at stake, and preached the gospel with a vigour and earnestness which had not been heard in that region since the middle of the seventeenth century.[3]

When the General Assembly met in May, 1840, a firm attitude was assumed by the popular party, who were still in a majority, and the suspension of the Strathbogie ministers was confirmed by a majority of eighty-four. The debate on this matter was long and animated. The final motion to continue their suspension was carried by a majority of sixty-four. The Moderate party in the Church now threw in their lot with the Strathbogie ministers, and the position which they soon drifted into was something like this: Whatever the Court of Session had declared to effect civil rights passed at once from the ecclesiastical jurisdiction to that of the civil courts; the Church could not finally determine it, therefore she must submit to the dictation of the civil courts. This, they said, was the law of the land, and obedience to it was the first duty of all loyal subjects. They made few or no allusions to the fundamental conception and the original principles of Presbyterianism. It became pretty evident, too, that so far as the British government had any ideas upon the matter, they were most akin to those avowed by the Moderate party. They therefore resolved to carry on the conflict with a high hand.

[3] Although I was only six years of age, being living in the heart of Strathbogie, I recollect these proceedings quite clearly. One of the suspended ministers was our family minister, and subsequently I knew five of them very well, and have frequently heard them preaching. The last of them died about ten years ago.

The popular party were equally resolute, and, with a clear aim in view and a firm grasp of principles, they already foresaw the ultimate issue of the struggle, and were prepared to face it.

The commission of the General Assembly met in Edinburgh on the 12th of August, 1840, when a motion to serve a libel on the seven ministers of Strathbogie was carried by a majority of one hundred and eighty to sixty-six; but the minority were securely covered by the Court of Session. The following is a portion of Dr. Chalmers' speech to the members of the commission in reference to the libel. After remarking on the many encroachments of the civil courts, he said: "We must stand out against this series of aggressions thus rising in magnitude one above the other, else the most sacred, the most sacramental of our institutions, the very innermost recesses of the sanctuary, will be opened to the invader and trampled under foot. I know the obloquy which will be heaped upon us. I have heard the odious names which will be given us for this resistance; and I am prepared for them. If not an impartial public, at least an impartial posterity will tell whether we are rebels or they are persecutors. And here I may say one word to those who express the hope—and I observe that Sir Robert Peel is among the number—that we will give up our personal feelings and do otherwise than this. To what personal feelings he refers, he does not specify—whether it be the feeling of irritation or of false honour,—the pride of men who have committed themselves and gone too far to retract without shame and degradation. If so, never was an appeal made wider of its object. These personal feelings have no existence with us; or if they have, it is in so slight a degree that they are altogether overborne by principles of a depth and height and breadth and length sufficient to engross and occupy the whole man. The principles, whether our adversaries comprehend them or not,—the only moving forces that have told and still tell on the Assembly,—are the full security of our spiritual independence. The Headship of Christ, the authority of the Bible as the great spiritual statute-book, not to be lorded over by any power on earth, a deference to our own standards in matters ecclesiastical, and a submission, unqualified and entire, to the civil power in all matters civil. These are our principles; and these principles, not personal feelings, we are asked to give up by men who have put forth unhallowed hands upon them. I ask, is there no room for a similar appeal to them? Have they no personal feelings,—no acrimony arising from the anticipation of

defeat,—no triumph arising from the anticipation of victory? Have they no mortification of wounded vanity lest their battle-cry—'What firmness has done before, firmness may do again'—lest that battle-cry should be rolled back by a resolute and unyielding Church on the heads of those who used it. . . . I was enumerating what may be the personal feelings of our adversaries, and I have a right to do so. I have a right to state everything that has occurred, whether within or without the limits of this court, that may lead the house to a right decision. I say, is there no inward chagrin among parliamentary friends, mourning over their abortive measures,—is there no sense of offended dignity among the functionaries of the law, lest it should be found that law—no impossible thing in the course of a hundred and fifty years—had for once gone beyond its sphere? I ask, which of the rival elements ought to give way? Whether the personal feelings of the men who have nothing to lose in this contest, or the personal feelings of men who are ready to risk all for principles; and who, though many of them are in the winter of life, would, rather than renounce their principles, abandon their homes, and brave the prospect of being cast, with their helpless and houseless families, upon the wide world? I ask if it was well in Sir Robert Peel, from his high station and from his seat of silken security, to deal out his admonitions to the Church of Scotland in this way; and while he spares the patrician feelings of his compeers, to take no account of the principles and feelings of those conscientious men who, humble in station but high in spirit, are ready, like their forefathers of old, to renounce all their enjoyments for the glory and the dignity of their Church."

Alluding to the excitement and what was going on throughout the country, he ventured on an anticipation of future changes, which have since been fully realised:—"As we were not permitted to regulate the call, let the right of nomination be so regulated as to anticipate the call; and for this purpose let us, in the name of all Scotland—and I am sure of nineteen-twentieths of her people—seek, through the medium of the legislature, to modify, and, if less will not do, utterly to abolish the system of patronage. It is a consummation to which I look forward without uneasiness. . . . The time is fast approaching when our political constitution will be greatly more popularised; and it is one of the reasons why I plead so strongly at present for the independence of the Church, that if we

are obliged to give it up now to the patrons, we must give it up then to the people."

Under an order from the Court of Session, the suspended ministers of Strathbogie inducted Mr. Edwards in the church of Marnoch, on the 21st of January, 1841. The proceedings, which took place on this memorable occasion have been fully described by eye-witnesses, are well known, and need not be repeated. But the majority of the General Assembly, the non-intrusion body, had been driven into a position by the decisions, interdicts, decrees, and orders issued from the Court of Session, which had rendered it impossible for them to entertain any compromise, or recede from their original conception and fundamental principles. Accordingly, the General Assembly of 1841 deposed the Strathbogie ministers. Very different views have been taken of the action of the majority of the Court of Session, for, on the main principle involved, the bench, as a whole, never agreed. Looking at the matter as a historian, all forms of constitutional law and common law are grounded upon history and usage. The first point for consideration therefore is, was the interference and consequent decisions of the Court of Session historically justifiable? It is a fact, that the theory of the Court of Session since its institution, in 1533, has been that it was a court for the administration of justice in civil cases; it was never specially empowered to determine ecclesiastical cases or issue orders for proceedings in such cases. There were always courts for settling ecclesiastical matters within their own jurisdiction. Of course, from the Reformation to the Revolution the powers assumed and exercised in the courts of the Presbyterian Church were often questioned, interfered with, and their decisions and proceedings reversed and repealed by the Government of the country, but not by the Court of Session; or if it ever intermeddled in ecclesiastical cases, it was under special instructions from the Government of the day, not from any power inherent in its own constitution. This was the state of the question till the Revolution.

After the Revolution in 1690, the Presbyterian polity was re-established by statute. At the same time, patronage was abolished in this way: when a vacancy occurred, the heritors and elders had to nominate a minister for the approval of the congregation, and if the congregation disapproved of the nominee, they were required to adduce their reasons before the Presbytery, and in its hands the final settlement was left.[4]

[4] *Acts Parl. Scot.*, Vol. IX., pp. 196-197.

In the Treaty of Union, by a special and emphatic article, the polity, privileges, and ecclesiastical jurisdiction of the Presbyterian Church of Scotland were to continue inviolable "to the people of this land in all succeeding generations," There is no reservation to the effect that the Court of Session shall have the power of overriding the proceedings of her courts.

But, contrary to the letter and spirit of the Treaty of Union, and to all conceptions of a just and wise policy toward the Scottish nation, the British Government imposed upon Scotland a new Patronage Act in 1712. It is historically true, however, that this Act was not generally enforced against the sentiments and feelings of the people, even by the ecclesiastical courts, till past the middle of the eighteenth century; and it was observed in a preceding page that the sentiments of the people were invincibly against its practical application. Keeping within the lines of just and reasonable historic exposition, the point under consideration naturally assumes this form:—When an effort was made by the supreme ecclesiastical court of the nation not to violate the highest sentiments and aspirations of the people by intruding spiritual instructors upon congregations, what had the Court of Session to do with that? This is the historic and constitutional question.

It seems obvious that this was not a question for the Court of Session at all, but one for the British Government, if the ecclesiastical court had not the power to settle it. The Court of Session has no legislative functions, hence when it interfered in this matter, it only looked at one side of the shield—namely, the rights of patrons and presentees. It began and ended with these, declaring that the people had no right to a voice at all in the choice of their spiritual and moral instructors. Thus the Court of Session succeeded in dragging the constitution and the principles of the Church of Scotland through the dust. When this Court saw, as it could not but have seen, that it could only deal with a mere fraction of the great questions and interests involved in the struggle, it should have stood aloof, and allowed the Government to interfere when it became necessary. During the three centuries and a half of its career, the Court of Session has done many curious and questionable things, but history cannot point to a series of its proceedings more signally illegal and disastrous than those which it enacted in connection with the Disruption of the Church.

For several years the whole country rang with the clamour and

talk of non-intrusion and spiritual independence. Pamphlets, speeches, and ballads were circulated through the country in hundreds of thousands, most of which were serious and earnest, but vehement and impassioned. In short, the excitement and agitation, the controversy and discussion of the engrossing subject, and the interests involved in it, occupied the attention of every family and household, and many a family became disunited in religious feeling. The popular party put forth extraordinary efforts, and sounded the kingdom from end to end.

The non-intrusion party repeatedly approached the Government, and laid the state of the Church before it. But seeing that the Court of Session, in its wisdom and unmatched foresight, had assumed the function of government in this conflict, the British ministry felt a strong desire to let it run to the end of the course on which it had entered, for neither the Whig nor the Conservative Governments were at all anxious to try their hands on this difficult matter. The Whigs had little love for Churches, and it was only for its patronage, and chiefly for the politics of the moderate party, that the Conservative in general had any respect for the Church of Scotland. Hence the Court of Session was allowed to enjoy its glory to the end of the conflict.

When the General Assembly of 1842 met in May, the anarchy within the Church was fearful. Under a warrant from the Court of Session, the deposed ministers of Strathbogie had met and elected two of their number, and an elder from Aberdeen, to represent them in the General Assembly, with a commission, in the usual form, to take their place amongst its members. On a division these commissions were rejected by a majority of one hundred and thirty. But the Court of Session and the deposed ministers went further; they interdicted and discharged the members elected by the other party in the Presbytery of Strathbogie from taking any part in the Assembly. The Assembly ignored this interdict, and the members took their seats. This was a state of matters which could not continue.

A motion for the abolition of patronage was proposed, and carried by a majority of sixty-nine. The claim, declaration, and protest, or, more shortly, the Claim of Rights, was moved and discussed at great length, and finally adopted by a majority of one hundred and thirty-one. It is a very able and well-known document, and was drawn up by Mr. Alexander Dunlop, Advocate, an able, calm, wise, and reso-

lute gentleman. Mr. Dunlop gave much of his time and thought to the service of the Church, for which he never accepted a single farthing. He was one of the ablest and most honourable men who appeared in the Assemblies of the period. The Claim of Rights is a memorable specimen of his spirit and powers.

But the claims and the attitude of the Church of Scotland were grossly misrepresented in Parliament, especially in the House of Lords, and by no one more so than the rambling and bombastic Lord Brougham. On the 7th and 8th of March, 1843, a debate took place on the Church of Scotland's Claim of Rights in the House of Commons. The subject was introduced by Mr. Fox Maule in a very clear and able speech. Sir James Graham followed him, and in the course of his speech said:—"These pretensions of the Church of Scotland (Claim of Rights), as they now stand, of a co-ordinate jurisdiction, and the demand that the Government should establish one law on the subject of parishes, and should allow the judge, by the interpretation of the statute judging of his own case, to set up another law co-equal with, and paramount to the law of the realm, did appear to him an expectation so unjust and unreasonable, the sooner the House extinguished it the better, because he was satisfied that any such expectation never could be realised in any country in which law, equity, or order, or common sense prevailed." Other members spoke in favour and against the claims of the Church, but the Prime Minister, Sir Robert Peel, was vehemently opposed to her claims, though it is evident that he had not taken the trouble to understand them. He declared that the Church, in its proceedings against the Strathbogie ministers, had laid claim to greater powers than ever were claimed, even before the Reformation by the Church of Rome herself. Touching the question of the limits of the civil and ecclesiastical power, it seemed to him that this should be determined by the English law lords. When the division was taken, the motion was rejected by a majority of one hundred and thirty-five, but out of the thirty-seven Scotch members who were present at the division, twenty-five voted in favour of the motion. Thus the Claim of Rights was rejected in the British Parliament, but not by the representatives of Scotland.

On the 5th of April, 1843, Lord Campbell, in the House of Lords, introduced five resolutions, which were to this effect:—1. That the House was desirous that the Church of Scotland should freely possess and enjoy her rights, government, discipline, and privileges, accord-

ing to law, in all time coming. 2. That she is an excellent Church. 3. That, with a view to heal the unhappy discussions now prevailing, "this House is of opinion that the demands of the Church should be conceded by the legislature, in so far as they can be safely conceded; and that when any measure for correcting the alleged abuses of patronage shall be constitutionally brought before this House, this House will favourably entertain the same, and anxiously endeavour that the end of the said measure may be attained." 4. That, in the opinion of this House, the demand that patronage be abolished, as a grievance, is unreasonable and unfounded, and ought not to be conceded. 5. "The demand of the Church that the law shall be framed so as to give the Church courts absolute authority, in every case, to define the limits of their own jurisdiction, without any power in any civil court in any way to question or interfere with their proceedings or decrees, although they may exceed their jurisdiction," etc. That this claim of "exclusive spiritual jurisdiction is unprecedented in any Christian Church since the Reformation, is inconsistent with the permanent welfare of the Church, and the existence of subordination and good government in the country". This is a misrepresentation.

In the debate which followed, the speakers maintained that even if some redress were needed, none should be given until the Church should obey the existing law. Lord Brougham said "he would not be a party to the suicidal, to the self-destructive folly of giving men new laws to break until they had consented to obey the old law". Referring to Lord Aberdeen, Brougham said "his noble friend, who seemed to be a non-intrusionist—What! Would he have that principle not only established in Scotland, but carried south of the Tweed? Would he have it eat into our English system? Would he he seek, by means of it, to destroy our Erastianism?" Such was the twaddle and rant which the House of Lords thought proper to vent on this momentous subject. No thought of what was due to the people of Scotland ever entered into their minds.

The popular party of the clergy were now everywhere earnestly preparing to leave the Establishment, as it was hopeless to prolong the contest. The forethought, the systematic order, the discipline of the rank and file, and the completeness of all their arrangements were truly wonderful. In short, the final scene of leaving the Establishment presented the characteristics of the closing act of a noble, a memorable, and well-played drama.

On the two Sundays before the meeting of the Assembly many congregations throughout the country had been moved to the core by farewell sermons from ministers to whom they were deeply attached. It was known that an extraordinary move was about to be made; but the uncertainty as to its extent and form had produced an anxiety and uneasiness of feeling unexampled in Scotland since the battle of Culloden. How would the Royal Commissioner act? Would he dissolve the Assembly, or would he recognise the minority as constituting the Assembly?

The Assembly met on the 18th of May, 1843. Dr. Welsh of Edinburgh opened the proceedings by delivering a sermon before the Royal Commissioner in St. Giles', in which he announced what was going to happen. Dr. Welsh then proceeded to St. Andrew's Church, where the Assembly was to be held, and took his place in the Moderator's chair; and the Commissioner entered the church a few minutes after. The church was crowded, and Dr. Welsh rose and engaged in prayer. After the members had resumed their seats, he again rose, and announced that, in consequence of certain proceedings affecting their rights and privileges, which had been sanctioned by the Government of the country, and more especially seeing that there had been an infringement on the liberties of the constitution of the Church, so that they could not constitute this court without violating the terms of the union between Church and State in this nation, and, therefore, "I must protest against our proceeding further." Accordingly, amidst profound silence and intense alarm on the moderate benches, he read the protest, which fully explained the grounds of the step they were about to take. When he had read the protest, he handed the document to the Clerk at the table, bowed to the Commissioner, quitted the chair, lifted his hat, and walked away. Instantly, Dr. Chalmers, Dr. Gordon, and what appeared to be the whole of those in the left side of the church, rose and followed him. About two hundred walked out; and they were joined outside by three hundred clergymen and other adherents.

Dr. Welsh wore his Moderator's dress; and as soon as he appeared on the street, and the people saw that principle had risen above interest, shouts of triumph rent the air, such as had not been heard in Edinburgh since the days of the Covenant. They walked down Hanover Street to Canonmills, where a large hall had been fitted up for the reception of the disestablished Assembly. They elected Dr. Chalmers Moderator, and formed themselves into the first General

Assembly of the "Free Church of Scotland." Four hundred and seventy-four ministers left the Establishment in 1843; they were also joined by about two hundred probationers, nearly a hundred theological students of the University of Edinburgh, three-fourths of those in Glasgow, and a majority of those in Aberdeen.

The Free Church commenced to work with earnestness and vigour, and her success and usefulness from the first has been remarkable. As this is well known, I need not dwell on it; it is more in character with the scope of this History to remark on the peaceable and orderly features of the "Disruption:" I call it a revolution of a peculiar character, because it was effected without violence or bloodshed. In rebutting the charges brought against the Scotch Reformers of the sixteenth century touching the excesses which occurred, and especially the destruction of religious buildings, I then said:—"Each party has striven to lay the blame upon the other, to exaggerate or extenuate these excesses, according to their respective standpoints. But it should be remembered that there never was a revolution without excesses, and the reason of which is not difficult to find. The amount of outrage and the destruction of property which a revolution may entail mainly depends on the strength and completeness of the organised moral force in the country at the time of its occurrence. If the moral sentiments and ideas of the nation are but imperfectly formed, the guiding and restraining feelings and influences only partly developed through the social organisation, and the intelligence of the people is very limited and dim, and, as it were, only awakening to a consciousness that they have been long deluded, then, in such circumstances, a revolution cannot be effected without anarchy and excess in various forms. The same undeviating principle comes into play in this as in everything else; when the moral organisation is sufficiently developed and ripe, the desired and needful reform is gradually brought to pass by peaceful means."[5]

The creation of the Free Church, in the month of May, 1843, is the best illustration of the principle stated above which has as yet occurred; and it affords ample and striking evidence of the moral change of the people of Scotland since the sixteenth century, and that the very principles which were introduced at the Reformation have contributed greatly to place the Scottish nation upon the moral elevation which was so palpably and beautifully manifested in the

[5] Mackintosh's *History of Civilisation in Scotland*, Vol. II., pp. 94-5.

peaceful and orderly revolution which gave birth to the Free Church of Scotland. It was an event charged with a moral power of vast import, and which could not fail to produce beneficial results.

The Established Church for a time was greatly crippled, and her pre-eminence has not been restored. But she has worked steadily and well, and extended her lines on every side. The Roman Catholics have increased more, comparatively, especially in recent years, than any other denomination, in the present century. The Roman hierarchy has recently been restored in Scotland. As observed in preceding chapters, toleration and liberty of thought have made remarkable progress within the last fifty years; no one need now be afraid to announce their opinions, if they have anything to tell worthy of attention.

CHAPTER LIII.

Summary of the Work—Conclusion.

I.—THE first volume opens with a few brief explanations of the method and scope of the work, and touched on the primary causes of civilisation, indicating that the human mind was the prime factor.

1. The geographical and physical aspects of the country were described. The influence of climate, and other external agencies were considered; and, also the general features of the country in relation to the imagination and understanding.

2. The principle of historic interpretation in reference to the order of development—touching thought and language, was treated; and the importance of the discrimination of historical evidence was also pointed out.

3. The interesting problem of the cradle of the human race was mooted; and followed by the question of the cradle of the great Aryan race, of which a concise statement was presented. The ethnology of Scotland was next handled, and disentangled from a mass of legends and obscuring accretions.

4. The prehistoric period, embracing the stone and iron ages, were treated in detail. The stone weapons and implements were described, and the processes of their manufacture indicated. The various modes of disposing of the dead, interments in chambered cairns, cremation, and other peculiarities, were described. The origin and use of the earth-houses was discussed, and primitive boats noticed.

5. The introduction of the use of metals was narrated. Bronze weapons and tools found in Scotland were described; and attention was directed to the gold ornaments of the prehistoric period. Traces of the dwellings and sites of the prehistoric people were treated, including crannogs, and hill forts. The modes of interment which prevailed in the bronze age were handled. An attempt was made to indicate the probable duration of the prehistoric period in Scotland.

6. So far as available data admitted, an account of the religion, social state, and culture of the prehistoric people was presented.

II.—The Roman invasion and occupation of a portion of the country was narrated. This occupation tended to create new historical conditions in the Island.

7. The relative position of the chief tribes in the country from the fifth century to the foundation of the historic monarchy was given. The natural circumstances which led to its foundation and its limits were also indicated.

III.—Advent of a new factor of civilisation—The introduction of Christianity and the missionary labours of the early saints were narrated; and the impression which they left upon the people was noted.

8. The gradual extension of the kingdom was concisely narrated; and a change of historical conditions indicated.

9. The social state of the people from the seventh century to the end of the eleventh was presented in detail.

10. Early architecture, including the brochs, round towers, and rude chapels, were historically treated. The sculptured stones were described, and historically handled in relation to the life and habits of the people. The art of these monuments was also briefly treated. The distinctive characteristics of this art as exhibited on metal ornaments were indicated.

The fragments of early literature and chronicles, and teaching in the monasteries were noticed.

IV.—A critical estimate of the result of Norman feudalism on the civilisation of Scotland was presented, in which interesting details of the social state of the Normans themselves are given.

11. An account of the kingdom and the introduction of feudalism in the twelfth and thirteenth centuries was presented. The social state of the people, trade, organisation, and civilisation, were treated in detail.

12. The difficulties arising from the disputed succession issued in the War of Independence, of which a clear account was given. The results of the battles of Stirling Bridge and Bannockburn ultimately led to the acknowledgment of the independence of the nation.

13. A narrative of events from the death of Robert I. to 1424 was presented.

14. The reign of James I. was exceedingly important. He was an able ruler, and endeavoured to curb the lawless nobles. He tried to govern the kingdom through parliament, and was the first King who

attempted to introduce the principle of representation in Scotland. A body of laws was passed in parliament in his short reign, such as is not to be found in any period of the same length before or since, and these were recorded and proclaimed in the language of the people, and in many other ways he struggled to redress the disorder and oppression which had so long prevailed.

15. After the murder of James I., to the battle of Flodden, the struggle between the Crown and the nobles often distracted the kingdom. A narrative of the chief events and proceedings till 1513 was presented.

16. An exhaustive account of the social state of the nation in the fourteenth and fifteenth centuries was given : Embracing the origin and peculiarities of the Scottish Parliament ; the power of the nobles ; agriculture, and the state of the tenants and labourers, the Crown lands, and relative subjects were detailed. The burghal communities —their trade, and the characteristics of their daily life were handled at length. The commerce and coinage of the kingdom, the defence of the country—armour, weapons, and organisation of the army were treated. Amusements and games, the dress of the different ranks, household goods and ornaments, were noticed. The price of the staple necessaries of life, and the wages of workmen were indicated. Crime and defects in the administration of justice, and the forms of punishment, were treated in detail. Architecture, the wealth of the Church and monasteries, were noticed ; and an account of the religious feeling of the people was presented.

17. The literature of the period, education, music, and art were treated.

V. New historical conditions had arisen, and the second volume, which deals with the sixteenth century, opened with a survey of the agencies and causes which preceded the Reformation. The power, wealth, and vast organisation of the Church in the Middle Ages was indicated ; and an outline of the popular belief presented. The Inquisition, morals of the clergy, translations of the Bible, awakening of the moral and religious consciousness were touched on ; and the early stages of the revolutionary movement explicated.

18. The history of the Reformation in Scotland till the overthrow of the Roman Catholic Church, was given. The external circumstances and influences which aided the Reformation in Scotland were examined ; while the inner and sustaining causes of the movement

were shown to depend upon the moral sentiments and convictions of the people.

19. An outline of the Confession, polity, and organisation of the Reformed Church of Scotland was given; and other proceedings of the Reformers noticed.

20. The reign of Queen Mary was treated at length. The trying circumstances in which she was placed were pointed out. Her difficulties with the Reformed preachers, marriage with Darnley, and consequent proceedings, the character of her husband, who became a mere tool in the hands of the nobles, were narrated. The difficulties thickening around her, the tragic events, and the proceedings which ended in her flight to England, were related.

21. The history of Protestantism and the conflict of the clergy with the Crown was commenced and continued till the accession of James VI. to the throne of England. The proceedings of the Reformed clergy in the struggle with a party of the nobles and the King were concisely narrated; and the attitude of the nobles and the policy of the King were placed in a clear light.

22. At the close of the history of Protestantism a brief expository statement was made, in which it was enunciated that the supreme sustaining power of the Reformation throughout was the moral sentiments and ideas, coupled with religious feelings and aspirations.

23. The social state of the people in the sixteenth century was next treated. Commencing with a reference to the character of the Government, I described the state of the inhabitants of the Borders and Highlands. The prevalent classes of crime and forms of punishment, the defective organisation, and habits of swearing, were handled. The defective sanitary condition of the towns was noticed. The state of the tenants and tillers of the land, and the poor, were noted. The religious feelings of the people, as manifested in their daily life, was illustrated, and indications of the approaching change were noticed.

24. After the Reformation sharp and severe measures were adopted for the suppression of immorality and vice. The relation of the different sexes, the observance of Sunday, the regulation of marriage, the protection of the life of infants, and also the condition of the poor, engaged the attention of the Reformed Church and the Government. Trials and executions for witchcraft were noticed. The coinage, mining operations, and the trade and commerce of the kingdom were noted. Sumptuary enactments touching dress, eating, drinking, and popular amusements were passed by the Government.

25. The literature of the nation in the first half of the century, embracing the writings of Dunbar and Gavin Douglas, was reviewed and characterised; and also the Complaint of Scotland, which was treated in detail.

26. The literature more associated with the Reformation movement, including the writings of Sir David Lyndsay, and also ballads and rhymes were treated historically. An account of the writings of Knox, and others, was given; and the historical and political writings of Buchanan were characterised. The literature of the later part of the century, poetical, religious, and scientific, was noticed.

27. In no branch of effort was the evidence of the change more remarkable than in the interest shown in education. Although there were grammar schools centuries before, yet it was not till the Reformation that the supreme importance of education was recognised.

After the Reformation, many efforts were made to erect and organise primary schools, and before the end of the century a considerable number of these were established. The Reformed clergy took a warm interest in the education of the people, and exerted themselves to the utmost to promote it. Efforts were also made to reform and re-organise the Universities, which were noticed.

28. The concluding chapter of this volume presents an attempt on psychological and historical grounds to explicate the ultimate problem of the Reformation. In a concise form it indicates several of the great religious movements which have occurred in the world, in order to illustrate in some measure the influence of Christianity as a factor in civilisation, and in the progress of Scotland.

VI. The third volume covers the period from 1603 to 1746, and opens with a review of the influences of the Union of the Crowns upon Scotland. The means adopted for the pacification of the Borders were indicated in detail. The policy of James VI. and Charles I. was stated. The Covenanting struggle was narrated, and the fall of the King noted. The Covenanters executed their work heroically and effectively.

29. During the sequence of events the kingdom fell under the sway of Cromwell. After resistance ceased, the country was well governed, and peace and order reigned.

30. In the natural course of events Cromwell died, and the traditions and glories associated with the throne and the monarchy were

soon in the ascendant. Charles II. was recalled, and entered London amid the shouts of the populace.

VII. The Restoration was a reactionary movement, which proved more injurious to Scotland than to England.

31. The principles of the Government were exposed, and a clear narrative of their proceedings and the suffering inflicted upon the people was presented. The reign of Charles II. terminated in 1685 amid a scene of persecution, oppression, and corruption unmatched in the worst times of the nation's history.

32. The Duke of York then mounted the throne, and a proclamation was read at the Cross of Edinburgh, announcing that he was "the only and undoubted king of the realm." This man, who had succeeded to the sceptre of three kingdoms, soon gave the culminating touch to the ideas of the absolute power of the King, which had entailed so much suffering and bloodshed. For a few years he played his game admirably. But he became odious to the Scots, and lost the confidence of the English nation; by his own rash and inconsiderate action at last he found himself helpless and forlorn, and fled from the throne of his ancestors.

33. When the crisis of the Revolution was observed to be nigh, great excitement arose in the South and West of Scotland, and tumults ensued in Edinburgh. The Convention of Estates met at Edinburgh in March 1688. Then the throne was declared vacant, the Crown was tendered to William and Mary, and the "Claim of Right" presented. Thus the Revolution was recognised in Scotland.

VIII.—The period from the Revolution to the Union was treated in detail. Many important events and matters were touched on, such as the rise of the commercial spirit, the Darien scheme and the proceedings connected with it, the policy of England and the attitude assumed by the Scots. The proceedings connected with the passing of the Treaty Union were narrated, and the excitement in the kingdom noted.

34. The advantages and disadvantages of the Union were touched on, the causes of disaffection in Scotland; and the Risings of 1715 and 1745 were concisely handled. The separate political history of Scotland then terminated.

IX.—The social state of the people in the seventeenth century was very fully treated. Embracing the administration of justice,

crime throughout the kingdom, the state of the poor, and the laws for suppressing vagrancy, were handled. Supernatural ideas, persecution of the Quakers, and witchcraft, were treated. State of morality, observance of Sunday, drinking and swearing, irregular marriages, survival of customs associated with marriages and funerals, were noticed. Acts of Parliament regulating the dress of the different ranks of society were noted. The defective sanitary condition of the towns, lack of pure water, and cleansing appliances were indicated. Restrictions on trade and fixing the price of articles and food continued in the burghs. The wages of skilled workmen and farm labourers were noticed. The state of coal miners, and mining operations were noted. The condition of the roads, the introduction of postal communication, shipping, and agriculture, were noticed.

The subjects of the improvement, and introduction of various manufactures, such as tanning leather, woollen cloth, linen, soap works, glass works, paper making, and tobacco spinning, which had engaged the attention of Parliament and enterprising persons, were treated. After indicating the progress of the coinage, the establishment of the Bank of Scotland and a paper currency, I adduced more evidence that a spirit of trade and commercial enterprise had arisen among the Scots in the later part of the seventeenth century.

35. An account of the ballad and Jacobite literature of the period was given. Other branches of literature, including the progress of science, were also treated.

36. The progress of education, establishment of the parish schools, music, and art, were related.

37. The last chapter of the volume gave an outline of European philosophy in the seventeenth century and early part of the eighteenth, in which the systems of Bruno, Descartes, Spinoza, Leibnitz, Hobbes, Locke, Shaftesbury, and other philosophers, were concisely explicated. The aim of the outline was to show the historical relations of the philosophy which subsequently arose in Scotland, to the systems of thought which preceded it.

X.—Accordingly, the fourth volume commenced with the history of Scottish philosophy, Carmichael and Hutcheson—the founders of the school. Hutcheson's ethics were explained, and the influence of his teaching and writings indicated. Hume's chief psychological and philosophical works were explicated and characterised, and their influence on subsequent systems of thought pointed out. Adam

Smith's ethical theory was explained; and his famous work—*The Wealth of Nations* reviewed at length, and its influence noted.

38. The psychological works of Reid, Stewart, and Ferguson, were examined and characterised. The writings of Gerard, Beattie, Campbell, and Alison, were briefly noticed. Brown's psychology was examined in detail, and its influence noticed. The ethical views of Sir James Mackintosh were indicated.

39. Sir William Hamilton's philosophical views were treated at length. His psychology was explicated; and also his philosophy of the conditioned; and his views of logic. Ferrier's Theory of Knowing and Being was reviewed; and the History of Scottish Philosophy concluded with a notice of the psychological writings of George Croom Robertson.

40. The literature of the eighteenth and nineteenth centuries was treated under its various branches. Historical literature was concisely reviewed. The change of historic conceptions, method, discrimination of evidence, and greater freedom of criticism was noticed.

41. Poetry of the period was handled, and a considerable number of the works of the poets were characterised. Fiction also was briefly noticed, and a number of distinguished novelists mentioned.

42. Religious literature was treated; and it was remarked that much greater freedom of thought and criticism now prevailed in this department than heretofore.

43. Under the title of miscellaneous literature a number of important works were noticed. An account of the rise and development of newspapers, periodical literature, and works of reference was given.

44. The progress of mathematical, physical, and mechanical science was narrated. The bearing of these sciences upon the industrial arts and manufactures was indicated, and consequently their importance as factors of civilisation.

45. The progress of medical science followed:—1. The phenomenon presented to this science was indicated; 2. The state of medical science in Europe at the beginning of the eighteenth century was briefly explained; 3. The institution of the medical schools of Scotland were successively handled. Notices also were given of the teaching and works of the eminent medical men who contributed to found and raise the reputation of these schools.

46. The advance of education, and changes in the primary, grammar schools, and Universities were noticed.

47. Agriculture, and the remarkable changes introduced in it during the last hundred years were noticed.

XI. The progress of the coal, iron, and lead mining industries were detailed, and interesting particulars stated.

48. The erection of iron works and the introduction of iron manufactures were narrated.

49. The remarkable improvement and revolution in the means of communication were indicated.

50. The rapid increase of shipping was noticed. The progress of shipbuilding, application of steam power to propel vessels, and the introduction of steamboats and ships were noted. The change from wood to iron shipbuilding, and subsequently the substitution of steel, and the remarkable development of this branch of industry on the Clyde was noticed.

51. The erection and progress of glass and earthenware manufactures were noted.

52. The introduction and development of textile manufactures were treated in detail:—1. The mechanical inventions connected with the introduction of machinery and steam power in this department of industry were noticed; 2. The development of woollen manufactures; 3. The development of linen manufactures; 4. The introduction and development of cotton and jute manufactures; 5. Thread manufactures; 6. Silk and other manufactures.

53. The progress and development of paper manufactures and paper-hangings were narrated.

54. The development of printing, the introduction of printing machines and steam power in this department was noticed. The introduction of machines in bookbinding was also noted.

55. Leather and boot and shoe manufactures, Gutta-percha and India-rubber manufactures were noticed.

56. Sugar refining, brewing and distilling were treated.

57. A number of various manufactures were briefly noticed.

XII. Architecture was partly treated in relation to the modern reconstruction and recent sanitation of the chief cities.

58. Monumental art was treated with reference to stone monuments, and the granite industry.

59. Fine art, embracing music, painting, and sculpture, was handled at length.

XIII. A concise account of political and social movements was presented.

60. Ecclesiastical movements were treated. The historic grounds of the Disruption were traced; and a brief narrative of the later stages of the struggle was given.

In conclusion, the population, wealth, industries, and commerce of Scotland have greatly increased during the last two centuries. There have been intervals of fluctuation and depression, when numbers of working people in the centres of population have been out of employment. Yet I see no necessity for taking a gloomy view of the future. The resources of the human mind are not exhausted. The incidental suffering associated with the existing industrial system may be gradually remedied, as the moral and intellectual state of the people becomes more perfect. Let us all endeavour to eradicate injustice, and embrace every opportunity of ameliorating the conditions of life and human happiness.

Senior optimus – democrat vote
Gov vote of 1812
Crisis – reexamination
personality clashes
refreshing change

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